

Assessment Test

1. Which of the following are valid declarations? Assume `java.util.*` is imported.
 - A. `Vector<Map> v;`
 - B. `Set<String> s;`
 - C. `Map<String> m;`
 - D. `Map<String, String> m;`
2. You can determine all the keys in a Map in which of the following ways?
 - A. By getting a Set object from the Map and iterating through it.
 - B. By iterating through the Iterator of the Map.
 - C. By enumerating through the Enumeration of the Map.
 - D. By getting a List from the Map and enumerating through the List.
 - E. You cannot determine the keys in a Map.
3. What keyword is used to prevent an object from being serialized?
 - A. `private`
 - B. `volatile`
 - C. `protected`
 - D. `transient`
 - E. None of the above
4. An abstract class can contain methods with declared bodies.
 - A. True
 - B. False
5. Select the order of access modifiers from least restrictive to most restrictive.
 - A. `public`, `private`, `protected`, `default`
 - B. `default`, `protected`, `private`, `public`
 - C. `public`, `default`, `protected`, `private`
 - D. `default`, `public`, `protected`, `private`
 - E. `public`, `protected`, `default`, `private`
6. Which access modifier allows you to access method calls in libraries not created in Java?
 - A. `public`
 - B. `static`
 - C. `native`
 - D. `transient`
 - E. `volatile`

7. Which of the following statements are true? (Select all that apply.)
- A. A **final** object's data cannot be changed.
 - B. A **final** class can be subclassed.
 - C. A **final** method cannot be overloaded.
 - D. A **final** object cannot be reassigned a new address in memory.
 - E. None of the above.
8. The keyword **extends** refers to what type of relationship?
- A. "is a"
 - B. "has a"
 - C. "was a"
 - D. "will be a"
 - E. None of the above
9. Which of the following keywords is used to invoke a method in the parent class?
- A. **this**
 - B. **super**
 - C. **final**
 - D. **static**
10. Given the following code, what will be the outcome?
- ```
public class Funcs extends java.lang.Math {
 public int add(int x, int y) {
 return x + y;
 }
 public int sub(int x, int y) {
 return x - y;
 }
 public static void main(String[] a) {
 Funcs f = new Funcs();
 System.out.println("" + f.add(1, 2));
 }
}
```
- A. The code compiles but does not output anything.
  - B. "3" is printed out to the console.
  - C. The code does not compile.
  - D. None of the above.

11. Given the following code, what is the expected outcome?

```
public class Test {
 public static void main(String [] a)
 { int [] b = [1,2,3,4,5,6,7,8,9,0];
 System.out.println("a[2]=" + a[2]);
 }
}
```

- A. The code compiles but does not output anything.
- B. "a[2]=3" is printed out to the console.
- C. "a[2]=2" is printed out to the console.
- D. The code does not compile.
- E. None of the above.

12. What is the value of  $x$  after the following operation is performed?

$x = 23 \% 4;$

- A. 23
- B. 4
- C. 5
- D. 3
- E. 5

13. Given the following code, what keyword must be used at line 4 in order to stop execution of the for loop?

```
1. boolean b = true;
2. for (;;) {
3. if (b) {
4. <insert code>
5. }
6. // do something
7. }
```

- A. stop
- B. continue
- C. break
- D. None of the above

14. What method call is used to tell a thread that it has the opportunity to run?
- A. `wait()`
  - B. `notify()`
  - C. `start()`
  - D. `run()`
15. Given the following code, which of the results that follow would you expect?
- ```
1. package mail; 2.  
3. interface Box {  
4.     protected void open();  
5.     void close();  
6.     public void empty();  
7. }
```
- A. The code will not compile because of line 4.
 - B. The code will not compile because of line 5.
 - C. The code will not compile because of line 6.
 - D. The code will compile.
16. Assertions are used to enforce all but which of the following?
- A. Preconditions
 - B. Postconditions
 - C. Exceptions
 - D. Class invariants
17. The developer can force garbage collection by calling `System.gc()`.
- A. True
 - B. False
18. Select the valid primitive data types. (Select all that apply.)
- A. `boolean`
 - B. `bit`
 - C. `char`
 - D. `float`
 - E. All of the above

19. How many bits does a float contain?

- A. 1
- B. 8
- C. 1
- D. 3
- E. 6

20. What is the value of x after the following line is executed?

`x = 32 * (31 - 10 * 3);`

- A. 32
- B. 31
- C. 3
- D. 704
- E. None of the

21. A StringBuffer is slower than a StringBuilder, but a StringBuffer is threadsafe.

- A. True
- B. False

22. Select the list of primitives ordered in smallest to largest bit size representation.

- A. boolean, char, byte, double
- B. byte, int, float, char
- C. char, short, long, float
- D. char, int, float, long
- E. None of the above

23. Which class provides locale-sensitive text formatting for date and time information?

- A. java.util.TimeFormat
- B. java.util.DateFormat
- C. java.text.TimeFormat
- D. java.text.DateFormat

24. The following line of code is valid.

`int x = 9; byte b = x;`

- A. True
- B. False

25. Which of the following code snippets compile?

- A. Integer i = 7;
- B. Integer i = new Integer(5); int j = i;
- C. byte b = 7;
- D. int i = 7; byte b = i;
- E. None of the above

26. What will be the output of the following code?

```
public class StringTest {  
    public static void main(String [] a) {  
        String s1 = "test string";  
        String s2 = "test string"; if  
        (s1 == s2) {  
            System.out.println("same");  
        } else {  
            System.out.println("different  
            ");  
        }  
    }  
}
```

- A. The code will compile but not run.
- B. The code will not compile.
- C. "different" will be printed out to the console.
- D. "same" will be printed out to the console.
- E. None of the above.

27. Java arrays always start at index 1.

- A. True
- B. False

28. Which of the following statements accurately describes how variables are passed to methods?

- A. Arguments are always passed by value.
- B. Arguments are always passed by reference.
- C. Arguments that are primitive type are passed by value.
- D. Arguments that are passed with the & operator are passed by reference.

29. How do you change the value that is encapsulated by a wrapper class after you have instantiated it?
- A. Use the `setXXX()` method defined for the wrapper class.
 - B. Use the `parseXXX()` method defined for the wrapper class.
 - C. Use the `equals()` method defined for the wrapper class.
 - D. None of the above.
30. Suppose you are writing a class that provides custom deserialization. The class implements `java.io.Serializable` (and not `java.io.Externalizable`). What method should implement the custom deserialization, and what is its access mode?
- A. `private readObject`
 - B. `public readObject()`
 - C. `private readExternal()`
 - D. `public readExternal()`

Review Questions

1. A signed data type has an equal number of non-zero positive and negative values available.
 - A. True
 - B. False
2. Choose the valid identifiers from those listed here. (Choose all that apply.)
 - A. BigOILongStringWithMeaninglessName
 - B. \$int
 - C. bytes
 - D. \$1
 - E. finalist
3. Which of the following signatures are valid for the main() method entry point of an application? (Choose all that apply.)
 - A. public static void main()
 - B. public static void main(String arg[])
 - C. public void main(String [] arg)
 - D. public static void main(String[] args)
 - E. public static int main(String [] arg)
4. If all three top-level elements occur in a source file, they must appear in which order?
 - A. Imports, package declarations, classes/interfaces/enums
 - B. Classes/interfaces/enums, imports, package declarations
 - C. Package declaration must come first; order for imports and class/interfaces/enum definitions is not significant
 - D. Package declaration, imports, class/interface/enum definitions.
 - E. Imports must come first; order for package declarations and class/interface/enum definitions is not significant
5. Consider the following line of code:


```
int[] x = new int[25];
```

After execution, which statements are true? (Choose all that apply.)

 - A. x[24] is 0
 - B. x[24] is undefined
 - C. x[25] is 0
 - D. x[0] is null
 - E. x.length is 25

6. Consider the following application:

```
1. class Q6 {  
2.     public static void main(String args[]) {  
3.         Holder h = new Holder();  
4.         h.held = 100;  
5.         h.bump(h);  
6.         System.out.println(h.held);  
7.     }  
8. } 9.  
10. class Holder {  
11.     public int held;  
12.     public void bump(Holder theHolder) {  
13.         theHolder.held++; }  
14. }  
15. }
```

What value is printed out at line 6?

- A. 0
- B. 1
- C. 10
- D. 100

7. Consider the following application:

```
1. class Q7 {  
2.     public static void main(String args[]) {  
3.         double d = 12.3;  
4.         Decrementer dec = new Decrementer();  
5.         dec.decrement(d);  
6.         System.out.println(d);  
7.     }  
8. } 9.  
10. class Decrementer {  
11.     public void decrement(double decMe) {  
12.         decMe = decMe - 1.0;  
13.     }  
14. }
```

What value is printed out at line 6?

- A. 0.0
 - B. 1.0
 - C. 12.
 - D. 11.
- 8 How can you force garbage collection of an object?
- A. Garbage collection cannot be forced.
 - B. Call `System.gc()`.
 - C. Call `System.gc()`, passing in a reference to the object to be garbage-collected.
 - D. Call `Runtime.gc()`.
 - E. Set all references to the object to new values (`null`, for example).
- 9 What is the range of values that can be assigned to a variable of type `short`?
- A. Depends on the underlying hardware
 - B. 0 through $2^{16} - 1$
 - C. 0 through $2^{32} - 1$
 - D. -2^{15} through $2^{15} - 1$
 - E. -2^{31} through $2^{31} - 1$
- 10 What is the range of values that can be assigned to a variable of type `byte`?
- A. Depends on the underlying hardware
 - B. 0 through $2^8 - 1$
 - C. 0 through $2^{16} - 1$
 - D. -2^7 through $2^7 - 1$
 - E. -2^{15} through $2^{15} - 1$
- 11 Suppose a source file contains a large number of `import` statements. How do the imports affect the time required to compile the source file?
- A. Compilation takes no additional time.
 - B. Compilation takes slightly more time.
 - C. Compilation takes significantly more time.
- 12 Suppose a source file contains a large number of `import` statements and one class definition.
How do the imports affect the time required to load the class?
- A. Class loading takes no additional time.
 - B. Class loading takes slightly more time.

- c. Class loading takes significantly more time.

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13. Which of the following are legal import statements?

- A. `import java.util.Vector;`
- B. `static import java.util.Vector.*;`
- C. `import static java.util.Vector.*;`
- D. `import java.util.Vector static;`

14. Which of the following may be statically imported? (Choose all that apply.)

- A. Package names
- B. Static method names
- C. Static field names
- D. Method-local variable names

15. What happens when you try to compile and run the following code?

```
public class Q15 {
    static String s;
    public static void main(String[] args) {
        System.out.println(">>" + s + "<<");
    }
}
```

- A. The code does not compile
- B. The code compiles, and prints out >><<
- C. The code compiles, and prints out >>null<<

16. Which of the following are legal? (Choose all that apply.)

- A. `int a = abcd;`
- B. `int b = ABCD;`
- C. `int c = 0xabcd;`
- D. `int d = 0XABCD;`
- E. `int e = 0abcd;`
- F. `int f = 0ABCD;`

17. Which of the following are legal? (Choose all that apply.)

- A. `double d = 1.2d;`
- B. `double d = 1.2D;`
- C. `double d = 1.2d5;`
- D. `double d = 1.2D5;`

18. Which of the following are legal?

- A. `char c = 0x1234;`
- B. `char c = \u1234;`
- C. `char c = '\u1234';`

19. Consider the following code:

1. `StringBuffer sbuf = new StringBuffer();`
2. `sbuf = null;`
3. `System.gc();`

Choose all true statements:

- A. After line 2 executes, the `StringBuffer` object is garbage collected.
- B. After line 3 executes, the `StringBuffer` object is garbage collected.
- C. After line 2 executes, the `StringBuffer` object is eligible for garbage collection.
- D. After line 3 executes, the `StringBuffer` object is eligible for garbage collection.

20. Which of the following are true? (Choose all that apply.)

- A. Primitives are passed by reference.
- B. Primitives are passed by value.
- C. References are passed by reference.
- D. References are passed by value.

Review Questions

1. After execution of the following code fragment, what are the values of the variables `x`, `a`, and `b`?

1. `int x, a = 6, b = 7;`
2. `x = a++ + b++;`

- A. `x = 15, a = 7, b = 8`
- B. `x = 15, a = 6, b = 7`

- C. `x = 13, a = 7, b = 8`
D. `x = 13, a = 6, b = 7`
2. Which of the following expressions are legal? (Choose all that apply.)
A. `int x = 6; x = !x;`
B. `int x = 6; if (!(x > 3)) {}`
C. `int x = 6; x = ~x;`
3. Which of the following expressions results in a positive value in `x`?
A. `int x = -1; x = x >>> 5;`
B. `int x = -1; x = x >>> 32;`
C. `byte x = -1; x = x >>> 5;`
D. `int x = -1; x = x >> 5;`
4. Which of the following expressions are legal? (Choose all that apply.)
A. `String x = "Hello"; int y = 9; x += y;`
B. `String x = "Hello"; int y = 9; if (x == y) {}`
C. `String x = "Hello"; int y = 9; x = x + y;`
D. `String x = "Hello"; int y = 9; y = y + x;`
5. What is `-8 % 5`?
A. `-3`
B. `3`
C. `-2`
D. `2`
6. What is `7 % -4`?
A. `-3`
B. `3`
C. `-4`
D. `4`

7. What results from running the following code?

```
1. public class Xor {
2.     public static void main(String args[]) {
3.         byte b = 10; // 00001010 binary
4.         byte c = 15; // 00001111 binary
5.         b = (byte)(b ^ c);
6.         System.out.println("b contains " + b);
7.     }
8. }
```

- A. The output: b contains 10
- B. The output: b contains 5
- C. The output: b contains 250
- D. The output: b contains 245

8. What results from attempting to compile and run the following code?

```
1. public class Conditional {
2.     public static void main(String args[]) {
3.         int x = 4;
4.         System.out.println("value is " +
5.             ((x > 4) ? 99.99 : 9));
6.     }
7. }
```

- A. The output: value is 99.99
- B. The output: value is 9
- C. The output: value is 9.0
- D. A compiler error at line 5

9. What does the following code do?

```
Integer i = null;
if (i != null & i.intValue() == 5)
    System.out.println("Value is 5");
```

- A. Prints "Value is 5".
- B. Throws an exception.

10. Is it possible to define a class called `Thing` so that the following method can return true under certain circumstances?

```
boolean weird(Thing s) {  
    Integer x = new Integer(5);  
    return s.equals(x);  
}
```

- A. Yes
 - B. No
11. Suppose `ob1` and `ob2` are references to instances of `java.lang.Object`. If (`ob1 == ob2`) is false, can `ob1.equals(ob2)` ever be true?
- A. Yes
 - B. No
12. When a byte is added to a char, what is the type of the result?
- A. byte
 - B. char
 - C. int
 - D. short
 - E. You can't add a byte to a char.
13. When a short is added to a float, what is the type of the result?
- A. short
 - B. int
 - C. float
 - D. You can't add a short to a float.
14. Which statement is true about the following method?
- ```
int selfXor(int i) {
 return i ^ i;
}
```
- A. It always returns 0.
  - B. It always returns 1.
  - C. It always an `int` where every bit is 1.
  - D. The returned value varies depending on the argument.

15. Which of the following operations might throw an `ArithmeticException`?
- A. `>>`
  - B. `>>>`
  - C. `<<`
  - D. None of these
16. Which of the following operations might throw an `ArithmeticException`?
- A. `+`
  - B. `-`
  - C. `*`
  - D. `/`
  - E. None of these
17. What is the return type of the `instanceof` operator?
- A. A reference
  - B. A class
  - C. An `int`
  - D. A boolean
18. Which of the following may appear on the left-hand side of an `instanceof` operator?
- A. A reference
  - B. A class
  - C. An interface
  - D. A variable of primitive type
19. Which of the following may appear on the right-hand side of an `instanceof` operator? (Choose all that apply.)
- A. A reference
  - B. A class
  - C. An interface
  - D. A variable of primitive type
  - E. The name of a primitive type
20. What is `-50 >> 1`?
- A. A negative number with very large magnitude.
  - B. A positive number with very large magnitude.
  - C. `-100`
  - D. `-25`

E. 100

F. 25

### Review Questions

1. Which of the following declarations are illegal? (Choose all that apply.)
  - A. `default String s;`
  - B. `transient int i = 41;`
  - C. `public final static native int w();`
  - D. `abstract double d;`
  - E. `abstract final double hyperbolicCosine();`
2. Which of the following statements is true?
  - A. An abstract class may not have any final methods.
  - B. A final class may not have any abstract methods.
3. What is the minimal modification that will make this code compile correctly?
  1. `final class Aaa`
  2. `{`
  3. `int xxx;`
  4. `void yyy() { xxx = 1; }`
  5. `}`
  6.
  7.
  8. `class Bbb extends Aaa`
  9. `{`
  10. `final Aaa finalref = new Aaa();`
  11.
  12. `final void yyy()`
  13. `{`
  14. `System.out.println("In method yyy()");`
  15. `finalref.xxx = 12345;`
  16. `}`
  17. `}`
  - A. On line 1, remove the **final** modifier.
  - B. On line 10, remove the **final** modifier.
  - C. Remove line 15.
  - D. On lines 1 and 10, remove the **final** modifier.
  - E. The code will compile as is. No modification is needed.

4. Which of the following statements is true?

- A. Transient methods may not be overridden.
- B. Transient methods must be overridden.
- C. Transient classes may not be serialized.
- D. Transient variables must be static.
- E. Transient variables are not serialized.

5. Which statement is true about this application?

```

1. class StaticStuff
2. {
3. static int x = 10; 4.
5. static { x += 5; } 6.
7. public static void main(String args[])
8. {
9. System.out.println("x = " + x);
10. } 11.
12. static { x /= 5; }
13. }
```

- A. Lines 5 and 12 will not compile because the method names and return types are missing.
- B. Line 12 will not compile because you can only have one static initializer.
- C. The code compiles and execution produces the output x = 10.
- D. The code compiles and execution produces the output x = 15.
- E. The code compiles and execution produces the output x = 3.

6. Which statement is true about this code?

```

1. class HasStatic
2. {
3. private static int x = 100; 4.
5. public static void main(String args[])
6. {
7. HasStatic hs1 = new HasStatic();
8. hs1.x++;
9. HasStatic hs2 = new HasStatic();
10. hs2.x++;
```

```
11. hs1 = new HasStatic();
12. hs1.x++;
13. HasStatic.x++;
14. System.out.println("x =
15. }
16.
```

- A. Line 8 will not compile because it is a static reference to a private variable.
  - B. Line 13 will not compile because it is a static reference to a private variable.
  - C. The program compiles and the output is x = 102.
  - D. The program compiles and the output is x = 103.
  - E. The program compiles and the output is x = 104.
7. Given the following code, and making no other changes, which combination of access modifiers (**public**, **protected**, or **private**) can legally be placed before `aMethod()` on line 3 and be placed before `aMethod()` on line 8?
- ```
1. class SuperDuper
2. {
3.     void aMethod() { }
4. }
5.
6. class Sub extends SuperDuper
7. {
8.     void aMethod() { }
9. }
```
- A. line 3: **public**; line 8: **private**
 - B. line 3: **protected**; line 8: **private**
 - C. line 3: default; line 8: **private**
 - D. line 3: **private**; line 8: **protected**
 - E. line 3: **public**; line 8: **protected**
8. Which modifier or modifiers should be used to denote a variable that should not be written out as part of its class's persistent state? (Choose the shortest possible answer.)
- A. **private**
 - B. **protected**
 - C. **private protected**
 - D. **transient**
 - E. **volatile**

9. This question concerns the following class definition:

```

1. package abcde;
2.
3. public class Bird {
4.     protected static int referenceCount = 0;
5.     public Bird() { referenceCount++; }
6.     protected void fly() { /* Flap wings, etc. */ }
7.     static int getRefCount() { return referenceCount; }
8. }

```

Which statement is true about class `Bird` and the following class `Parrot`?

```

1. package abcde;
2.
3. class Parrot extends abcde.Bird {
4.     public void fly() {
5.         /* Parrot-specific flight code. */
6.     }
7.     public int getRefCount() {
8.         return referenceCount;
9.     }
10. }

```

- A. Compilation of `Parrot.java` fails at line 4 because method `fly()` is protected in the superclass, and classes `Bird` and `Parrot` are in the same package.
- B. Compilation of `Parrot.java` fails at line 4 because method `fly()` is protected in the superclass and public in the subclass, and methods may not be overridden to be more public.
- C. Compilation of `Parrot.java` fails at line 7 because method `getRefCount()` is static in the superclass, and static methods may not be overridden to be nonstatic.
- D. Compilation of `Parrot.java` succeeds, but a runtime exception is thrown if method `fly()` is ever called on an instance of class `Parrot`.
- E. Compilation of `Parrot.java` succeeds, but a runtime exception is thrown if method `getRefCount()` is ever called on an instance of class `Parrot`.

10. This question concerns the following class definition:

```

1. package abcde;
2.
3. public class Bird {

```


4. `protected static int referenceCount = 0;`
5. `public Bird() { referenceCount++; }`
6. `protected void fly() { /* Flap wings, etc. */ }`

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```

7. static int getRefCount() { return referenceCount; }
8. }

```

Which statement is true about class Bird and the following class Nightingale?

```

1. package singers;
2.
3. class Nightingale extends abcde.Bird {
4.     Nightingale() { referenceCount++;
5. }
6. public static void main(String args[]) {
7.     System.out.print("Before: " + referenceCount);
8.     Nightingale florence = new Nightingale();
9.     System.out.println(" After: " + referenceCount);
10.    florence.fly();
11. }
12. }

```

- A. The program will compile and execute. The output will be Before: 0 After: 2.
 - B. The program will compile and execute. The output will be Before: 0 After: 1.
 - C. Compilation of Nightingale will fail at line 4 because static members cannot be overridden.
 - D. Compilation of Nightingale will fail at line 10 because method fly() is protected in the superclass.
 - E. Compilation of Nightingale will succeed, but an exception will be thrown at line 10, because method fly() is protected in the superclass.
11. Suppose class Supe, in package packagea, has a method called doSomething(). Suppose class Subby, in package packageb, overrides doSomething(). What access modes may Subby's version of the method have? (Choose all that apply.)
- A. public
 - B. protected
 - C. Default
 - D. private
12. Which of the following statements are true?
- A. An abstract class may be instantiated.
 - B. An abstract class must contain at least one abstract method.
 - C. An abstract class must contain at least one abstract data field.
 - D. An abstract class must be overridden.

- E. An abstract class must declare that it implements an interface.
- F. None of the above.

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13. Suppose interface **Inty** defines five methods. Suppose class **Classy** declares that it implements **Inty** but does not provide implementations for any of the five interface methods. Which is/are true?
- A. The class will not compile.
 - B. The class will compile if it is declared **public**.
 - C. The class will compile if it is declared **abstract**.
 - D. The class may not be instantiated.
14. Which of the following may be declared **final**? (Choose all that apply.)
- A. Classes
 - B. Data
 - C. Methods
15. Which of the following may follow the **static** keyword? (Choose all that apply.)
- A. Class definitions
 - B. Data
 - C. Methods
 - D. Code blocks enclosed in curly brackets
16. Suppose class **A** has a method called **doSomething()**, with default access. Suppose class **B** extends **A** and overrides **doSomething()**. Which access modes may apply to **B**'s version of **doSomething()**? (Choose all that apply.)
- A. **public**
 - B. **private**
 - C. **protected**
 - D. Default
17. True or false: If class **Y** extends class **X**, the two classes are in different packages, and class **X** has a **protected** method called **abby()**, then any instance of **Y** may call the **abby()** method of any other instance of **Y**.
- A. True
 - B. False
18. Which of the following statements are true?
- A. A final class must be instantiated.
 - B. A final class must contain at least one final method.
 - C. A final class must contain at least one final data field.
 - D. A final class may not be extended.
 - E. None of the above.

19. Which of the following statements are true?

- A. A final class must be instantiated.
- B. A final class may only contain final methods.
- C. A final class may not contain non-final data fields.
- D. A final class may not be extended.
- E. None of the above.

20. What does the following code print?

```
public class A
{
    static int x;

    public static void main(String[] args)
    {
        A that1 = new A();
        A that2 = new A();
        that1.x = 5;
        that2.x = 1000;
        x = -1;
        System.out.println(x);
    }
}
```

- A. 0
- B. 5
- C. 1000
- D. -1

Review Questions

1. Which of the following statements is correct? (Choose one.)

- A. Only primitives are converted automatically; to change the type of an object reference, you have to do a cast.
- B. Only object references are converted automatically; to change the type of a primitive, you have to do a cast.

- C. Arithmetic promotion of object references requires explicit casting.
 - D. Both primitives and object references can be both converted and cast.
 - E. Casting of numeric types may require a runtime check.
2. Which one line in the following code will not compile?
- 1. `byte b = 5;`
 - 2. `char c = '5';`
 - 3. `short s = 55;`
 - 4. `int i = 555;`
 - 5. `float f = 555.5f;`
 - 6. `b = s;`
 - 7. `i = c;`
 - 8. `if (f > b)`
 - 9. `f = i;`
- A. Line 1
 - B. Line 2
 - C. Line 3
 - D. Line 4
 - E. Line 5
 - F. Line 6
 - G. Line 7
 - H. Line 8
 - I. Line 9
3. Will the following code compile?
- 1. `byte b = 2;`
 - 2. `byte b1 = 3;`
 - 3. `b = b * b1;`
- A. Yes
 - B. No

4. In the following code, what are the possible types for variable **result**? (Choose the most complete true answer.)

```
1. byte b = 11;
2. short s = 13;
3. result = b * ++s;
```

- A. byte, short, int, long, float, double
- B. boolean, byte, short, char, int, long, float, double
- C. byte, short, char, int, long, float, double
- D. byte, short, char
- E. int, long, float, double

5. Consider the following class:

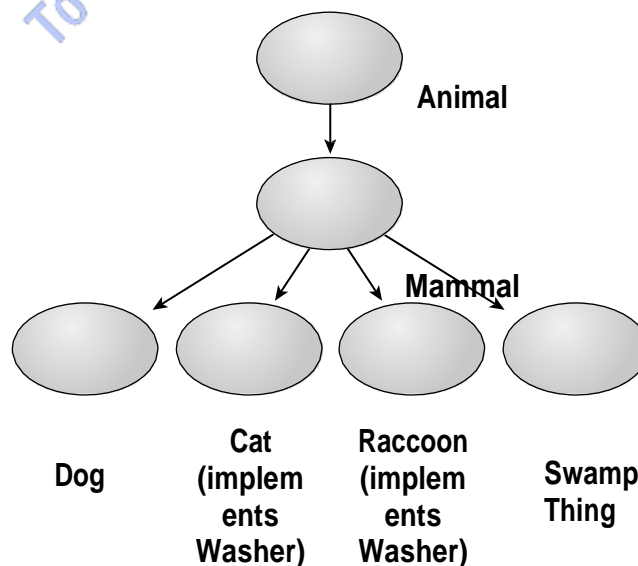
```
1. class Cruncher {
2.     void crunch(int i) {
3.         System.out.println("int version");
4.     }
5.     void crunch(String s) {
6.         System.out.println("String version");
7.     }
8.     public static void main(String args[]) {
9.         Cruncher crun = new Cruncher();
10.        char ch = 'p';
11.        crun.crunch(ch);
12.    }
13. }
14. }
```

Which of the following statements is true? (Choose one.)

- A. Line 5 will not compile, because void methods cannot be overridden.
- B. Line 12 will not compile, because no version of `crunch()` takes a char argument.
- C. The code will compile but will throw an exception at line 12.
- D. The code will compile and produce the following output: **int version**.
- E. The code will compile and produce the following output: **String version**.

6. Which of the following statements is true? (Choose one.)
- A. Object references can be converted in assignments but not in method calls.
 - B. Object references can be converted in method calls but not in assignments.
 - C. Object references can be converted in both method calls and assignments, but the rules governing these conversions are very different.
 - D. Object references can be converted in both method calls and assignments, and the rules governing these conversions are identical.
 - E. Object references can never be converted.
7. Consider the following code. Which line will not compile?
1. `Object ob = new Object();`
 2. `String[] stringarr = new String[50];`
 3. `Float floater = new Float(3.14f);`
 4. `ob = stringarr;`
 5. `ob = stringarr[5];`
 6. `floater = ob;`
 7. `ob = floater;`
- A. Line 4
 - B. Line 5
 - C. Line 6
 - D. Line 7

Questions 8–10 refer to the class hierarchy shown in the graphic below.



8. Consider the following code:

1. Dog rover, fido;
2. Animal anim; 3.

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```
4. rover = new Dog();  
5. anim = rover;  
6. fido = (Dog)anim;
```

Which of the following statements is true? (Choose one.)

- A. Line 5 will not compile.
- B. Line 6 will not compile.
- C. The code will compile but will throw an exception at line 6.
- D. The code will compile and run.
- E. The code will compile and run, but the cast in line 6 is not required and can be eliminated.

9. Consider the following code:

```
1. Cat sunflower;  
2. Washer wawa;  
3. SwampThing pogo; 4.  
5. sunflower = new Cat();  
6. wawa = sunflower;  
7. pogo = (SwampThing)wawa;
```

Which of the following statements is true? (Choose one.)

- A. Line 6 will not compile; an explicit cast is required to convert a Cat to a Washer.
- B. Line 7 will not compile, because you cannot cast an interface to a class.
- C. The code will compile and run, but the cast in line 7 is not required and can be eliminated.
- D. The code will compile but will throw an exception at line 7, because runtime conversion from an interface to a class is not permitted.
- E. The code will compile but will throw an exception at line 7, because the runtime class of
wawa cannot be converted to type
SwampThing.

10. Consider the following code:

```
1. Raccoon rocky;  
2. SwampThing pogo;  
3. Washer w; 4.  
5. rocky = new Raccoon();  
6. w = rocky;  
7. pogo = w;
```

Which of the following statements is true? (Choose one.)

- A. Line 6 will not compile; an explicit cast is required to convert a Raccoon to a Washer.
 - B. Line 7 will not compile; an explicit cast is required to convert a Washer to a SwampThing.
 - C. The code will compile and run.
 - D. The code will compile but will throw an exception at line 7, because runtime conversion from an interface to a class is not permitted.
 - E. The code will compile but will throw an exception at line 7, because the runtime class of w cannot be converted to type SwampThing.
11. Which of the following may legally appear as the new type (between the parentheses) in a cast operation?
- A. Classes
 - B. Interfaces
 - C. Arrays of classes
 - D. Arrays of interfaces
 - E. All of the above
12. Which of the following may legally appear as the new type (between the parentheses) in a cast operation?
- A. Abstract classes
 - B. Final classes
 - C. Primitives
 - D. All of the above
13. Suppose the declared type of x is a class, and the declared type of y is an interface. When is the assignment `x = y;` legal?
- A. When the type of x is `Object`
 - B. When the type of x is an array
 - C. Always
 - D. Never
14. Suppose the type of `xarr` is an array of XXX, and the type of `yarr` is an array of YYY. When is the assignment `xarr = yarr;` legal?
- A. Sometimes
 - B. Always
 - C. Never

15. When is `x & y` an `int`? (Choose one).
- A. Always
 - B. Sometimes
 - C. When neither `x` nor `y` is a float, a long, or a double
16. What are the legal types for `whatsMyType`?
- ```
short s = 10;
whatsMyType = !s;
```
- A. `short`
  - B. `int`
  - C. There are no possible legal types.
17. When a negative long is cast to a byte, what are the possible values of the result?
- A. Positive
  - B. Zero
  - C. Negative
  - D. All of the above
18. When a negative byte is cast to a long, what are the possible values of the result?
- A. Positive
  - B. Zero
  - C. Negative
19. Which of the following operators can perform promotion on their operands? (Choose all that apply.)
- A. `+`
  - B. `-`
  - C. `++`
  - D. `--`
  - E. `~`
  - F. `!`
20. What is the difference between the rules for method-call conversion and the rules for assignment conversion?
- A. There is no difference; the rules are the same.
  - B. Method-call conversion supports narrowing, assignment conversion does not.
  - C. Assignment conversion supports narrowing, method-call conversion does not.
  - D. Method-call conversion supports narrowing if the method declares that it throws

## ClassCastException.

## Review Questions

1. Consider the following code:

```

1. for (int i = 0; i < 2; i++) {
2. for (int j = 0; j < 3; j++) {
3. if (i == j) {
4. continue;
5. }
6. System.out.println("i = " + i + " j = " + j);
7. }
8. }
```

Which lines would be part of the output? (Choose all that apply.)

- A. i = 0 j = 0
- B. i = 0 j = 1
- C. i = 0 j = 2
- D. i = 1 j = 0
- E. i = 1 j = 1
- F. i = 1 j = 2

2. Consider the following code:

```

1. outer: for (int i = 0; i < 2; i++) {
2. for (int j = 0; j < 3; j++) {
3. if (i == j) {
4. continue outer;
5. }
6. System.out.println("i = " + i + " j = " + j);
7. }
8. }
```

Which lines would be part of the output? (Choose all that apply.)

- A. i = 0 j = 0
- B. i = 0 j = 1
- C. i = 0 j = 2
- D. i = 1 j = 0
- E. i = 1 j = 1
- F. i = 1 j = 2



3. Which of the following are legal loop constructions? (Choose all that apply.)

- A. 

```
while (int i<7) {
 i++;
 System.out.println("i is " + i);
}
```
- B. 

```
int i = 3; while
(i) {
 System.out.println("i is " + i);
}
```
- C. 

```
int j = 0;
for (int k=0, j+k != 10; j++,k++) {
 System.out.println("j=" + j + ", k=" +
 k);
}
```
- D. 

```
int j=0; do {
 System.out.println("j=" + j++);
 if (j==3)
 continue loop;
} while (j<10);
```

4. What would be the output from this code fragment?

1. 

```
int x = 0, y = 4, z = 5;
```
2. 

```
if (x > 2) {
```
3. 

```
 if (y < 5) {
```
4. 

```
 System.out.println("message one");
```
5. 

```
 }
```
6. 

```
 else {
```
7. 

```
 System.out.println("message two");
```
8. 

```
 }
```
9. 

```
}
```
10. 

```
else if (z > 5) {
```
11. 

```
 System.out.println("message three");
```
12. 

```
}
```
13. 

```
else {
```
14. 

```
 System.out.println("message four");
```
15. 

```
}
```

- A. message one
- B. message two
- C. message three
- D. message four

5. Which statement is true about the following code fragment?

```

1. int j = 2;
2. switch (j) {
3. case 2:
4. System.out.println("value is two");
5. case 2 + 1:
6. System.out.println("value is three");
7. break;
8. default:
9. System.out.println("value is " + j);
10. break;
11. }
```

- A. The code is illegal because of the expression at line 5.
  - B. The acceptable types for the variable **j**, as the argument to the **switch()** construct, could be any of **byte**, **short**, **int**, or **long**.
  - C. The output would be the text **value is two**.
  - D. The output would be the text **value is two** followed by the text **value is three**.
  - E. The output would be the text **value is two**, followed by the text **value is three**, followed by the text **value is 2**.
6. Consider the following class hierarchy and code fragment:

```

 java.lang.Exception
 |
 java.io.IOException
 / \
java.io.StreamCorruptedException java.net.MalformedURLException
```

```

1. try {
2. // assume s is previously defined
3. URL u = new URL(s);
4. // in is an ObjectInputStream
5. Object o = in.readObject();
6. System.out.println("Success");
7. }
8. catch (MalformedURLException e) {
9. System.out.println("Bad URL");
10. }
11. catch (StreamCorruptedException e) {
```



```
12. System.out.println("Bad file contents");
13. }
14. catch (Exception e) {
15. System.out.println("General exception");
```

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```

16. }
17. finally {
18. System.out.println("Doing finally part");
19. }
20. System.out.println("Carrying on");

```

What lines are output if the constructor at line 3 throws a `MalformedURLException`? (Choose all that apply.)

- A. Success
  - B. Bad URL
  - C. Bad file contents
  - D. General exception
  - E. Doing finally part
  - F. Carrying on
7. Consider the following class hierarchy and code fragment:

```

 java.lang.Exception
 / \
 java.io.IOException
 / \
java.io.StreamCorruptedException java.net.MalformedURLException

```

```

1. try {
2. // assume s is previously defined
3. URL u = new URL(s);
4. // in is an ObjectInputStream
5. Object o = in.readObject();
6. System.out.println("Success");
7. }
8. catch (MalformedURLException e) {
9. System.out.println("Bad URL");
10. }
11. catch (StreamCorruptedException e) {
12. System.out.println("Bad file contents");
13. }
14. catch (Exception e) {
15. System.out.println("General exception");
16. }
17. finally {
18. System.out.println("Doing finally part");

```

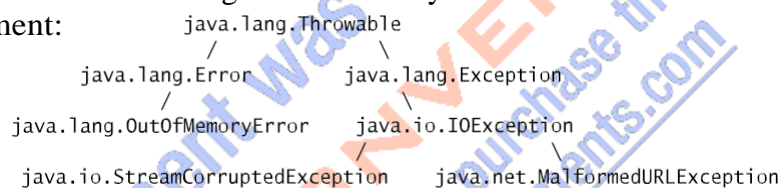
19. }
20. `System.out.println("Carrying on");`

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What lines are output if the methods at lines 3 and 5 complete successfully without throwing any exceptions? (Choose all that apply.)

- A. Success
- B. Bad URL
- C. Bad file contents
- D. General exception
- E. Doing finally part
- F. Carrying on

8. Consider the following class hierarchy and code fragment:



```

1. try {
2. // assume s is previously defined
3. URL u = new URL(s);
4. // in is an ObjectInputStream
5. Object o = in.readObject();
6. System.out.println("Success");
7. }
8. catch (MalformedURLException e) {
9. System.out.println("Bad URL");
10. }
11. catch (StreamCorruptedException e) {
12. System.out.println("Bad file contents");
13. }
14. catch (Exception e) {
15. System.out.println("General exception");
16. }
17. finally {
18. System.out.println("Doing finally part");
19. }
20. System.out.println("Carrying on");

```

What lines are output if the method at line 5 throws an `OutOfMemoryError`? (Choose all that apply.)

- A. Success
- B. Bad URL
- C. Bad file contents
- D. General exception
- E. Doing finally part
- F. Carrying on

9. Which of the following are appropriate situations for assertions?

- A. Preconditions of a public method
- B. Postconditions of a public method
- C. Preconditions of a private method
- D. Postconditions of a private method

10. Consider the following code:

```

1. public class Assertification {
2. public static void main(String[] args) {
3. assert args.length == 0;
4. }
5. }
```

Which of the following conditions must be true in order for the code to throw an `AssertionError`?

Assume you are using release 5.0. (Choose all that apply.)

- A. The source code must be compiled with the `-source 1.5` flag.
- B. The application must be run with the `-enableassertions` flag or another assertion-enabling flag.
- C. The `args` array must have exactly zero elements.
- D. The `args` array must have one or more elements.

11. Which of the following is the most appropriate way to handle invalid arguments in a public method?

- A. Throw `java.lang.InvalidArgumentException`.
- B. Throw `java.lang.IllegalArgumentException`.
- C. Check for argument validity in an `assert` statement, which throws `AssertionError` when the arguments are invalid.
- D. Use non-assert code to check for argument validity. If invalid arguments are detected, explicitly throw `AssertionError`.

12. Suppose `salaries` is an array containing floats. Which of the following are valid loop control statements for processing each element of `salaries`?
- A. `for (float f:salaries)`
  - B. `for (int i:salaries)`
  - C. `for (float f::salaries)`
  - D. `for (int i::salaries)`
13. Which of the following are legal? (Choose all that apply.)
- A. `for (int i=0, j=1; i<10; i++, j++)`
  - B. `for (int i=0, j=1;; i++, j++)`
  - C. `for (int i=0, float j=1; ; i++, j++)`
  - D. `for (String s = ""; s.length()<10; s += '!')`
14. Suppose a method called `finallyTest()` consists of a `try` block, followed by a `catch` block, followed by a `finally` block. Assuming the JVM doesn't crash and the code does not execute a `System.exit()` call, under what circumstances will the `finally` block *not* begin to execute?
- A. The `try` block throws an exception, and the `catch` block also throws an exception.
  - B. The `try` block throws an exception that is not handled by the `catch` block.
  - C. The `try` block throws an exception, and the `catch` block calls `finallyTest()` in a way that causes another exception to be thrown.
  - D. If the JVM doesn't crash and the code does not execute a `System.exit()` call, the `finally` block will always execute.
15. Which of the following are legal loop definitions? (Choose all that apply.)
- A. `while (int a = 0) { /* whatever */ }`
  - B. `while (int a == 0) { /* whatever */ }`
  - C. `do { /* whatever */ } while (int a = 0)`
  - D. `do { /* whatever */ } while (int a == 0)`
  - E. `for (int a==0; a<100; a++) { /* whatever */ }`
  - F. None of them are legal.
16. Which of the following are legal argument types for a `switch` statement?
- A. `byte`
  - B. `int`
  - C. `long`
  - D. `float`
  - E. `char`

F. String

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17. When is it appropriate to pass a cause to an exception's constructor?
- A. Always
  - B. When the exception is being thrown in response to catching of a different exception type
  - C. When the exception is being thrown from a public method
  - D. When the exception is being thrown from a private method
18. Which of the following should always be caught?
- A. Runtime exceptions
  - B. Checked exceptions
  - C. Assertion errors
  - D. Errors other than assertion errors
19. When does an exception's stack trace get recorded in the exception object?
- A. When the exception is constructed
  - B. When the exception is thrown
  - C. When the exception is caught
  - D. When the exception's `printStackTrace()` method is called
20. When is it appropriate to write code that constructs and throws an error?
- A. When a public method's preconditions are violated
  - B. When a public method's postconditions are violated
  - C. When a nonpublic method's preconditions are violated
  - D. When a nonpublic method's postconditions are violated
  - E. Never



## Review Questions

1. Consider this class:

```
1. public class Test1 {
2. public float aMethod(float a, float b) {
3. }
4.
5. }
```

Which of the following methods would be legal if added (individually) at line 4? (Choose all that apply.)

- A. `public int aMethod(int a, int b) { }`
- B. `public float aMethod(float a, float b) { }`
- C. `public float aMethod(float a, float b, int c) throws Exception { }`
- D. `public float aMethod(float c, float d) { }`
- E. `private float aMethod(int a, int b, int c) { }`

2. Consider these classes, defined in separate source files:

```
1. public class Test1 {
2. public float aMethod(float a, float b)
3. throws IOException { ...
4. }
5. }
```

```
1. public class Test2 extends Test1
{ 2.
3. }
```

Which of the following methods would be legal (individually) at line 2 in class Test2? (Choose all that apply.)

- A. `float aMethod(float a, float b) { ... }`

- B. `public int aMethod(int a, int b) throws Exception {...}`
- C. `public float aMethod(float a, float b) throws Exception {...}`
- D. `public float aMethod(float p, float q) {...}`

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3. You have been given a design document for a veterinary registration system for implementation in Java. It states:

*“A pet has an owner, a registration date, and a vaccination-due date. A cat is a pet that has a flag indicating whether it has been neutered, and a textual description of its markings.”*

Given that the `Pet` class has already been defined, which of the following fields would be appropriate for inclusion in the `Cat` class as members? (Choose all that apply.)

- A. `Pet thePet;`
  - B. `Date registered;`
  - C. `Date vaccinationDue;`
  - D. `Cat theCat;`
  - E. `boolean neutered;`
  - F. `String markings;`
4. You have been given a design document for a veterinary registration system for implementation in Java. It states:

*“A pet has an owner, a registration date, and a vaccination-due date. A cat is a pet that has a flag indicating if it has been neutered, and a textual description of its markings.”*

Given that the `Pet` class has already been defined and you expect the `Cat` class to be used freely throughout the application, how would you make the opening declaration of the `Cat` class, up to but not including the first opening brace? Use only these words and spaces: `boolean`, `Cat`, `class`, `Date`, `extends`, `Object`, `Owner`, `Pet`, `private`, `protected`, `public`, `String`.

- A. `protected class Cat extends Owner`
  - B. `public class Cat extends Object`
  - C. `public class Cat extends Pet`
  - D. `private class Cat extends Pet`
5. Consider the following classes, declared in separate source files:
1. `public class Base {`
  2. `public void method(int i) {`
  3. `System.out.print("Value is " + i);`
  4. `}`
  5. `}`
  1. `public class Sub extends Base {`
  2. `public void method(int j) {`

3. `System.out.print("This value is " + j);`

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```

4. }
5. public void method(String s) {
6. System.out.print("I was passed " + s);
7. }
8. public static void main(String args[]) {
9. Base b1 = new Base();
10. Base b2 = new Sub();
11. b1.method(5);
12. b2.method(6);
13. }
14. }

```

What output results when the main method of the class Sub is run?

- A. Value is 5Value is 6
  - B. This value is 5This value is 6
  - C. Value is 5This value is 6
  - D. This value is 5Value is 6
  - E. I was passed 5I was passed 6
6. Consider the following class definition:
- ```

1. public class Test extends Base {
2.     public Test(int j) {
3.     }
4.     public Test(int j, int k) {
5.         super(j, k);
6.     }
7. }

```

Which of the following are legitimate calls to construct instances of the Test class? (Choose all that apply.)

- A. Test t = new Test();
- B. Test t = new Test(1);
- C. Test t = new Test(1, 2);
- D. Test t = new Test(1, 2, 3);
- E. Test t = (new Base()).new Test(1);

7. Consider the following class definition:

```
1. public class Test extends Base {  
2.     public Test(int j) {  
3.     }  
4.     public Test(int j, int k) {  
5.         super(j, k);  
6.     }  
7. }
```

Which of the following forms of constructor must exist explicitly in the definition of the Base

class? Assume Test and Base are in the same package. (Choose all that apply.)

- A. Base() { }
- B. Base(int j) { }
- C. Base(int j, int k) { }
- D. Base(int j, int k, int l) { }

8. Consider the following definition:

```
1. public class Outer {  
2.     public int a = 1;  
3.     private int b = 2;  
4.     public void method(final int c) {  
5.         int d = 3;  
6.         class Inner {  
7.             private void iMethod(int e) {  
8.             }  
9.         }  
10.    }  
11. }  
12. }
```

Which variables can be referenced at line 8? (Choose all that apply.)

- A. a
- B. b
- C. c
- D. d
- E. e

9. Which of the following statements are true? (Choose all that apply.)
- A. Given that **Inner** is a nonstatic class declared inside a public class **Outer** and that appropriate constructor forms are defined, an instance of **Inner** can be constructed like this: `new Outer().new Inner()`
 - B. If an anonymous inner class inside the class **Outer** is defined to implement the interface **ActionListener**, it can be constructed like this: `new Outer().new ActionListener()`
 - C. Given that **Inner** is a nonstatic class declared inside a public class **Outer** and that appropriate constructor forms are defined, an instance of **Inner** can be constructed in a static method like this: `new Inner()`
 - D. An anonymous class instance that implements the interface **MyInterface** can be constructed and returned from a method like this:


```
1. return new MyInterface(int x) {
2.     int x;
3.     public MyInterface(int x) {
4.         this.x = x;
5.     }
6. };

```
10. Which of the following are legal enums?
- A. `enum Animals { LION, TIGER, BEAR }`
 - B. `enum Animals { int age; LION, TIGER, BEAR; }`
 - C. `enum Animals { LION, TIGER, BEAR; int weight; }`
 - D. `enum Animals { LION(450), TIGER(450), BEAR; int weight; Animals(int w) { weight = w; } }`
 - E. `enum Animals { LION(450), TIGER(450), BEAR; int weight; Animals() { } Animals(int w) { weight = w; } }`

11. Which of the following may override a method whose signature is `void xyz(float f)`?
 - A. `void xyz(float f)`
 - B. `public void xyz(float f)`
 - C. `private void xyz(float f)`
 - D. `public int xyz(float f)`
 - E. `private int xyz(float f)`
12. Which of the following are true? (Choose all that apply.)
 - A. An enum definition should declare that it extends `java.lang.Enum`.
 - B. An enum may be subclassed.
 - C. An enum may contain public method definitions.
 - D. An enum may contain private data.
13. Which of the following are true? (Choose all that apply.)
 - A. An enum definition may contain the `main()` method of an application.
 - B. You can call an enum's `toString()` method.
 - C. You can call an enum's `wait()` method.
 - D. You can call an enum's `notify()` method.
14. Suppose `x` and `y` are of type `TrafficLightState`, which is an enum. What is the best way to test whether `x` and `y` refer to the same constant?
 - A. `if (x == y)`
 - B. `if (x.equals(y))`
 - C. `if (x.toString().equals(y.toString()))`
 - D. `if (x.hashCode() == y.hashCode())`
15. Which of the following restrictions apply to anonymous inner classes?
 - A. They must be defined inside a code block.
 - B. They may only read and write final variables of the enclosing class.
 - C. They may only call final methods of the enclosing class.
 - D. They may not call the enclosing class' synchronized methods.
16. Given the following code, which of the following will compile?


```
enum Spice { NUTMEG, CINNAMON, CORIANDER,
             ROSEMARY; }
```

 - A. `Spice sp = Spice.NUTMEG; Object ob = sp;`
 - B. `Spice sp = Spice.NUTMEG; Object ob = (Object)sp;`
 - C. `Object ob = new Object(); Spice sp = object;`

d. `Object ob = new Object(); Spice sp = (Spice)object;`

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17. Which of the following are true?

- A. An anonymous inner class may implement at most one interface.
- B. An anonymous inner class may implement arbitrarily many interfaces.
- C. An anonymous inner class may extend a parent class other than `Object`.
- D. An anonymous inner class that implements one interface may extend a parent class other than `Object`.
- E. An anonymous inner class that implements several interfaces may extend a parent class other than `Object`.

18. Which methods return an enum constant's name?

- A. `getName()`
- B. `name()`
- C. `toString()`
- D. `nameString()`
- E. `getNameString()`

19. Suppose class `X` contains the following method:

```
void doSomething(int a, float b) { ... }
```

Which of the following methods may appear in class `Y`, which extends `X`?

- A. `public void doSomething(int a, float b) { ... }`
- B. `private void doSomething(int a, float b) { ... }`
- C. `public void doSomething(int a, float b) throws java.io.IOException { ... }`
- D. `private void doSomething(int a, float b) throws java.io.IOException { ... }`

20. This question involves `IOException`, `AWTException`, and `EOFException`. They are all checked exception types. `IOException` and `AWTException` extend `Exception`, and `EOFException` extends `IOException`. Suppose class `X` contains the following method:

```
void doSomething() throws IOException { ... }
```

Which of the following methods may appear in class `Y`, which extends `X`?

- A. `void doSomething() { ... }`
- B. `void doSomething() throws AWTException { ... }`
- C. `void doSomething() throws EOFException { ... }`
- D. `void doSomething() throws IOException, EOFException { ... }`

Review Questions

1. Which one statement is true concerning the following code?

```

1. class Greebo extends java.util.Vector
2. implements Runnable {
3.     public void run(String message) {
4.         System.out.println("in run() method: " +
5.             message);
6.     }
7. }
8.
9. class GreeboTest {
10.     public static void main(String args[]) {
11.         Greebo g = new Greebo();
12.         Thread t = new Thread(g);
13.         t.start();
14.     }
15. }
16. }
```

- A. There will be a compiler error, because class Greebo does not correctly implement the Runnable interface.
- B. There will be a compiler error at line 13, because you cannot pass a parameter to the constructor of a Thread.
- C. The code will compile correctly but will crash with an exception at line 13.
- D. The code will compile correctly but will crash with an exception at line 14.
- E. The code will compile correctly and will execute without throwing any exceptions.

2. Which one statement is always true about the following application?

```

1. class HiPri extends Thread {
2.     HiPri() {
3.         setPriority(10);
4.     }
5.
6.     public void run() {
7.         System.out.println(
8.             "Another thread starting up.");
9.         while (true) { }
10.    }
11.
12.    public static void main(String args[]) {
```

```

13.    HiPri hp1 = new HiPri();
14.    HiPri hp2 = new HiPri();
15.    HiPri hp3 = new HiPri();
16.    hp1.start();
17.    hp2.start();
18.    hp3.start();
19.    }
20.    }

```

- A. When the application is run, thread hp1 will execute; threads hp2 and hp3 will never get the CPU.
 - B. When the application is run, thread hp1 will execute to completion, thread hp2 will execute to completion, then thread hp3 will execute to completion.
 - C. When the application is run, all three threads (hp1, hp2, and hp3) will execute concurrently, taking time-sliced turns in the CPU.
 - D. None of the above scenarios can be guaranteed to happen in all cases.
3. A thread wants to make a second thread ineligible for execution. To do this, the first thread can call the `yield()` method on the second thread.
- A. True
 - B. False
4. A thread's `run()` method includes the following lines:
- ```

1. try {
2. sleep(100);
3. } catch (InterruptedException e) { }

```

Assuming the thread is not interrupted, which one of the following statements is correct?

- A. The code will not compile, because exceptions cannot be caught in a thread's `run()` method.
  - B. At line 2, the thread will stop running. Execution will resume in, at most, 100 milliseconds.
  - C. At line 2, the thread will stop running. It will resume running in exactly 100 milliseconds.
  - D. At line 2, the thread will stop running. It will resume running some time after 100 milliseconds have elapsed.
5. A monitor called `mon` has 10 threads in its waiting pool; all these waiting threads have the same priority. One of the threads is `thr1`. How can you notify `thr1` so that it alone moves from the Waiting state to the Ready state?
- A. Execute `notify(thr1)`; from within synchronized code of `mon`.

- B. Execute `mon.notify(thr1)`; from synchronized code of any object.
- C. Execute `thr1.notify()`; from synchronized code of any object.
- D. Execute `thr1.notify()`; from any code (synchronized or not) of any object.
- E. You cannot specify which thread will get notified.

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6. If you attempt to compile and execute the following application, will it ever print out the message In xxx?

```

1. class TestThread3 extends Thread {
2. public void run() {
3. System.out.println("Running");
4. System.out.println("Done");
5. }
6.
7. private void xxx() {
8. System.out.println("In xxx");
9. }
10.
11. public static void main(String args[]) {
12. TestThread3 ttt = new TestThread3();
13. ttt.xxx();
14. ttt.start();
12. }
13. }

```

- A. Yes
- B. No

7. A Java monitor must either extend Thread or implement Runnable.

- A. True
- B. False

8. Which of the following methods in the Thread class are deprecated?

- A. suspend() and resume()
- B. wait() and notify()
- C. start() and stop()
- D. sleep() and yield()

9. Which of the following statements about threads is true?

- A. Every thread starts executing with a priority of 5.
- B. Threads inherit their priority from their parent thread.
- C. Threads are guaranteed to run with the priority that you set using the `setPriority()` method.
- D. Thread priority is an integer ranging from 1 to 100.

10. Which of the following statements about the `wait()` and `notify()` methods is true?
  - A. The `wait()` and `notify()` methods can be called outside synchronized code.
  - B. The programmer can specify which thread should be notified in a `notify()` method call.
  - C. The thread that calls `wait()` goes into the monitor's pool of waiting threads.
  - D. The thread that calls `notify()` gives up the lock.
11. Which of the following may not be synchronized?
  - A. Blocks within methods
  - B. Static methods
  - C. Blocks within static methods
  - D. Classes
12. Which of the following calls may be made from a non-static synchronized method?
  - A. A call to the same method of the current object.
  - B. A call to the same method of a different instance of the current class.
  - C. A call to a different synchronized method of the current object.
  - D. A call to a static synchronized method of the current class.
13. How many locks does an object have?
  - A. One
  - B. One for each method
  - C. One for each synchronized method
  - D. One for each non-static synchronized method
14. Is it possible to write code that can execute only if the current thread owns multiple locks?
  - A. Yes.
  - B. No.
15. Which of the following are true? (Choose all that apply.)
  - A. When an application begins running, there is one daemon thread, whose job is to execute `main()`.
  - B. When an application begins running, there is one non-daemon thread, whose job is to execute `main()`.
  - C. A thread created by a daemon thread is initially also a daemon thread.
  - D. A thread created by a non-daemon thread is initially also a non-daemon thread.



16. Which of the following are true?
- A. The JVM runs until there is only one daemon thread.
  - B. The JVM runs until there are no daemon threads.
  - C. The JVM runs until there is only one non-daemon thread.
  - D. The JVM runs until there are no non-daemon threads.

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17. How do you prevent shared data from being corrupted in a multithreaded environment?
- A. Mark all variables as synchronized.
  - B. Mark all variables as volatile.
  - C. Use only static variables.
  - D. Access the variables only via synchronized methods.
18. How can you ensure that multithreaded code does not deadlock?
- A. Synchronize access to all shared variables.
  - B. Make sure all threads yield from time to time.
  - C. Vary the priorities of your threads.
  - D. A, B, and C do not ensure that multithreaded code does not deadlock.
19. Which of the following are true? (Choose all that apply.)
- A. When you declare a method to be synchronized, the method always synchronizes on the lock of the current object.
  - B. When you declare a method to be synchronized, you can specify the object on whose lock the method should synchronize.
  - C. When you declare a block of code inside a method to be synchronized, the block always synchronizes on the lock of the current object.
  - D. When you declare a block of code inside a method to be synchronized, you can specify the object on whose lock the block should synchronize.
20. Suppose you want to create a custom thread class by extending `java.lang.Thread` in order to provide some special functionality. Which of the following must you do?
- A. Declare that your class implements `java.lang.Runnable`.
  - B. Override `run()`.
  - C. Override `start()`.
  - D. Make sure that all access to all data is via synchronized methods.

### Review Questions

1. Given a string constructed by calling `s = new String("xyzzzy")`, which of the

calls modifies the string?

- A. `s.append("aaa");`
- B. `s.trim();`
- C. `s.substring(3);`
- D. `s.replace('z', 'a');`
- E. `s.concat(s);`
- F. None of the above

2. Which one statement is true about the following code?

1. `String s1 = "abc" + "def";`
2. `String s2 = new String(s1);`
3. `if (s1 == s2)`
4. `System.out.println("== succeeded");`
5. `if (s1.equals(s2))`
6. `System.out.println(".equals() succeeded");`

- A. Lines 4 and 6 both execute.
- B. Line 4 executes and line 6 does not.
- C. Line 6 executes and line 4 does not.
- D. Neither line 4 nor line 6 executes.

3. Suppose you want to write a class that offers static methods to compute hyperbolic trigonometric functions. You decide to subclass `java.lang.Math` and provide the new functionality as a set of static methods. Which one statement is true about this strategy?

- A. The strategy works.
- B. The strategy works, provided the new methods are public.
- C. The strategy works, provided the new methods are not private.
- D. The strategy fails because you cannot subclass `java.lang.Math`.
- E. The strategy fails because you cannot add static methods to a subclass.



4. Which one statement is true about the following code fragment?
- ```

1. import java.lang.Math;
2. Math myMath = new Math();
3. System.out.println("cosine of 0.123 = " +
4.   myMath.cos(0.123));

```
- A. Compilation fails at line 2.
 - B. Compilation fails at line 3 or 4.
 - C. Compilation succeeds, although the import on line 1 is not necessary. During execution, an exception is thrown at line 3 or 4.
 - D. Compilation succeeds. The import on line 1 is necessary. During execution, an exception is thrown at line 3 or 4.
 - E. Compilation succeeds and no exception is thrown during execution.
5. Which one statement is true about the following code fragment?
- ```

1. String s = "abcde";
2. StringBuffer s1 = new StringBuffer("abcde");
3. if (s.equals(s1))
4. s1 = null;
5. if (s1.equals(s))
6. s = null;

```
- A. Compilation fails at line 1 because the **String** constructor must be called explicitly.
  - B. Compilation fails at line 3 because **s** and **s1** have different types.
  - C. Compilation succeeds. During execution, an exception is thrown at line 3.
  - D. Compilation succeeds. During execution, an exception is thrown at line 5.
  - E. Compilation succeeds. No exception is thrown during execution.
6. In the following code fragment, after execution of line 1, **sbuf** references an instance of the **StringBuffer** class. After execution of line 2, **sbuf** still references the same instance.
- ```

1. StringBuffer sbuf = new StringBuffer("abcde");
2. sbuf.insert(3, "xyz");

```
- A. True
 - B. False

7. In the following code fragment, after execution of line 1, sbuf references an instance of the `StringBuffer` class. After execution of line 2, sbuf still references the same instance.
1. `StringBuffer sbuf = new StringBuffer("abcde");`
 2. `sbuf.append("xyz");`
- A. True
B. False
8. In the following code fragment, line 4 is executed.
1. `String s1 = "xyz";`
 2. `String s2 = "xyz";`
 3. `if (s1 == s2)`
 4. `System.out.println("Line 4");`
- A. True
B. False
9. In the following code fragment, line 4 is executed.
1. `String s1 = "xyz";`
 2. `String s2 = new String(s1);`
 3. `if (s1 == s2)`
 4. `System.out.println("Line 4");`
- A. True
B. False
10. Suppose `prim` is an `int` and `wrapped` is an `Integer`. Which of the following are legal Java statements? (Choose all that apply.)
- A. `prim = wrapped;`
B. `wrapped = prim;`
C. `prim = new Integer(9);`
D. `wrapped = 9;`
11. Which of the following are legal? (Choose all that apply.)
- A. `List<String> theList = new Vector<String>;`
B. `List<String> theList = new Vector<String>();`
C. `Vector <String> theVec = new Vector<String>;`
D. `Vector <String> theVec = new Vector<String>();`

12. Given the following,

```
Map<String> names = new HashMap<String>();
```

which of the following are legal? (Choose all that apply.)

- A. `Iterator<String> iter = names.iterator();`
 - B. `for (String s:names)`
 - C. `while (String s:names)`
13. Which of the following are legal `clone()` methods in a class called Q13 that extends `Object`?
- A. `public Object clone() { return super.clone(); }`
 - B. `public Object clone()
throws CloneNotSupportedException { return super.clone(); }`
 - C. `public Q13 clone() { return (Q13)super.clone(); }`
 - D. `public Q13 clone()
throws CloneNotSupportedException { return
(Q13)super.clone(); }`
14. Which of the following classes implement `java.util.List`?
- A. `java.util.ArrayList`
 - B. `java.util.HashList`
 - C. `java.util.StackList`
 - D. `java.util.Stack`
15. Which of the following are methods of the `java.util.SortedSet` interface?
- A. `first`
 - B. `last`
 - C. `headSet`
 - D. `tailSet`
 - E. `subSet`
16. Which of the following are methods of the `java.util.SortedMap` interface?
- A. `first`
 - B. `last`
 - C. `headMap`
 - D. `tailMap`
 - E. `subMap`

17. Which line of code tells a scanner called `sc` to use a single digit as a delimiter?
- `sc.useDelimiter("d");`
 - `sc.useDelimiter("\\d");`
 - `sc.useDelimiter("\\d");`
 - `sc.useDelimiter("d+");`
 - `sc.useDelimiter("\\d+");`
 - `sc.useDelimiter("\\d+");`
18. What happens when you try to compile and run this application?
- ```

1. import java.util.*;
2.
3. public class Apple {
4. public static void main(String[] a) {
5. Set<Apple> set = new TreeSet<Apple>();
6. set.add(new Apple());
7. set.add(new Apple());
8. set.add(new Apple());
9. }
10. }

```
- Compiler error.
  - An exception is thrown at line 6.
  - An exception is thrown at line 7.
  - An exception is thrown at line 8.
  - No exception is thrown.
19. Given arrays `a1` and `a2`, which call returns `true` if `a1` and `a2` have the same length, and `a1[i].equals(a2[i])` for every legal index `i`?
- `java.util.Arrays.equals(a1, a2);`
  - `java.util.Arrays.compare(a1, a2);`
  - `java.util.List.compare(a1, a2);`
  - `java.util.List.compare(a1, a2);`
20. Which of the following statements are true?
- `StringBuilder` is generally faster than `StringBuffer`.
  - `StringBuffer` is generally faster than `StringBuilder`.
  - `StringBuilder` is threadsafe; `StringBuffer` is not.
  - `StringBuffer` is threadsafe; `StringBuilder` is not.

## Review Questions

1. Which of the statements below are true? (Choose all that apply.)
  - A. UTF characters are all 8 bits.
  - B. UTF characters are all 16 bits.
  - C. UTF characters are all 24 bits.
  - D. Unicode characters are all 16 bits.
  - E. Bytecode characters are all 16 bits.
  - F. None of the above.
2. Which of the statements below are true? (Choose all that apply.)
  - A. When you construct an instance of `File`, if you do not use the file-naming semantics of the local machine, the constructor will throw an `IOException`.
  - B. When you construct an instance of `File`, if the corresponding file does not exist on the local file system, one will be created.
  - C. When an instance of `File` is garbage collected, the corresponding file on the local file system is deleted.
  - D. None of the above.
3. Which of the statements below are true? (Choose all that apply.)
  - A. To change the current working directory, call the `setWorkingDirectory()` method of the `File` class.
  - B. To change the current working directory, call the `cd()` method of the `File` class.
  - C. To change the current working directory, call the `changeWorkingDirectory()` method of the `File` class.
  - D. None of the above.
4. How do you use the `File` class to list the contents of a directory?
  - A. `String[] contents = myFile.list();`
  - B. `File[] contents = myFile.list();`
  - C. `StringBuilder[] contents = myFile.list();`
  - D. The `File` class does not provide a way to list the contents of a directory.
5. How many bytes does the following code write to file `dest`?
  1. `try {`
  2. `FileOutputStream fos = new FileOutputStream("dest");`
  3. `DataOutputStream dos = new DataOutputStream(fos);`
  4. `dos.writeInt(3);`
  5. `dos.writeDouble(0.0001);`

```

6. dos.close();
7. fos.close();
8. }
9. catch (IOException e) { }

```

- A. 2
- B. 8
- C. 12
- D. 16
- E. The number of bytes depends on the

6. What does the following code fragment print out at line 9?

```

1. FileOutputStream fos = new FileOutputStream("xx");
2. for (byte b=10; b<50; b++)
3. fos.write(b);
4. fos.close();
5. RandomAccessFile raf = new RandomAccessFile("xx", "r");
6. raf.seek(10);
7. int i = raf.read();
8. raf.close();
9. System.out.println("i = " + i);

```

- A. The output is `i = 30`.
- B. The output is `i = 20`.
- C. The output is `i = 10`.
- D. There is no output because the code throws an exception at line 1.
- E. There is no output because the code throws an exception at line 5.

7. A file is created with the following code:

```

1. FileOutputStream fos = new FileOutputStream("datafile");
2. DataOutputStream dos = new DataOutputStream(fos);
3. for (int i=0; i<500; i++)
4. dos.writeInt(i);

```

You would like to write code to read back the data from this file. Which solutions will work?

(Choose all that apply.)

- A. Construct a `FileInputStream`, passing the name of the file. Onto the `FileInputStream`, chain a `DataInputStream`, and call its `readInt()` method.
  - B. Construct a `FileReader`, passing the name of the file. Call the file reader's `readInt()` method.
  - C. Construct a `PipedInputStream`, passing the name of the file. Call the piped input stream's `readInt()` method.
  - D. Construct a `RandomAccessFile`, passing the name of the file. Call the random access file's `readInt()` method.
  - E. Construct a `FileReader`, passing the name of the file. Onto the `FileReader`, chain a `DataInputStream`, and call its `readInt()` method.
8. Which of the following is true?
- A. Readers have methods that can read and return `floats` and `doubles`.
  - B. Readers have methods that can read and return `floats`.
  - C. Readers have methods that can read and return `doubles`.
  - D. Readers have methods that can read and return `ints`.
  - E. None of the above.
9. You execute the following code in an empty directory. What is the result?
1. `File f1 = new File("dirname");`
  2. `File f2 = new File(f1, "filename");`
- A. A new directory called `dirname` is created in the current working directory.
  - B. A new directory called `dirname` is created in the current working directory. A new file called `filename` is created in directory `dirname`.
  - C. A new directory called `dirname` and a new file called `filename` are created, both in the current working directory.
  - D. A new file called `filename` is created in the current working directory.
  - E. No directory is created, and no file is created.
10. What is the result of attempting to compile and execute the following code fragment? Assume that the code fragment is part of an application that has write permission in the current working directory. Also assume that before execution, the current working directory does not contain a file called `datafile`.

1. try {
2.   RandomAccessFile raf = new
3.     RandomAccessFile("datafile" ,"rw");
4.   BufferedOutputStream bos = new

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```
5. BufferedOutputStream(raf);
6. DataOutputStream dos = new
7. DataOutputStream(bos);
8. dos.writeDouble(Math.PI);
9. dos.close();
10. bos.close();
11. raf.close();
12. }
13. catch (IOException e) { }
```

- A. The code fails to compile.
  - B. The code compiles but throws an exception at line 4.
  - C. The code compiles and executes but has no effect on the local file system.
  - D. The code compiles and executes; afterward, the current working directory contains a file called `datafile`.
11. Suppose you are writing a class that will provide custom serialization. The class implements `java.io.Serializable` (not `java.io.Externalizable`). What access mode should the `writeObject()` method have?
- A. `public`
  - B. `protected`
  - C. `default`
  - D. `private`
12. Suppose you are writing a class that will provide custom deserialization. The class implements `java.io.Serializable` (not `java.io.Externalizable`). What access mode should the `readObject()` method have?
- A. `public`
  - B. `protected`
  - C. `default`
  - D. `private`
13. Suppose class A extends `Object`; class B extends A; and class C extends B. Of these, only class C implements `java.io.Serializable`. Which of the following must be true in order to avoid an exception during deserialization of an instance of C?
- A. A must have a no-args constructor.
  - B. B must have a no-args constructor.
  - C. C must have a no-args constructor.
  - D. There are no restrictions regarding no-args constructors.



14. Suppose class A extends `Object`; Class B extends A; and class C extends B. Of these, only class C implements `java.io.Externalizable`. Which of the following must be true in order to avoid an exception during deserialization of an instance of C?
- A. A must have a no-args constructor.
  - B. B must have a no-args constructor.
  - C. C must have a no-args constructor.
  - D. There are no restrictions regarding no-args constructors.

15. Given the following class:

```
public class Xyz implements
 java.io.Serializable {
 public int iAmPublic;
 private int iAmPrivate;
 static int iAmStatic;
 transient int iAmTransient;
 volatile int iAmVolatile;

 . . .
}
```

Assuming the class does not perform custom serialization, which fields are written when an instance of Xyz is serialized? (Choose all that apply.)

- A. `iAmPublic`
  - B. `iAmPrivate`
  - C. `iAmStatic`
  - D. `iAmTransient`
  - E. `iAmVolatile`
16. What method of the `java.io.File` class can create a file on the hard drive?
- A. `newFile()`
  - B. `makeFile()`
  - C. `makeNewFile()`
  - D. `createFile()`
  - E. `createNewFile()`
17. Which of the following are true? (Choose all that apply.)
- A. `System.out` has a `println()` method.
  - B. `System.out` has a `format()` method.
  - C. `System.err` has a `println()` method.
  - D. `System.err` has a `format()` method.

18. What happens when you try to compile and run the following application?

```
1. import java.io.*; 2.
3. public class Xxx {
4. public static void main(String[] args) {
5. try {
6. File f = new File("xxx.ser");
7. FileOutputStream fos = new FileOutputStream(f);
8. ObjectOutputStream oos = new ObjectOutputStream(fos);
9. oos.writeObject(new Object());
10. oos.close();
11. fos.close();
12. }
13. catch (Exception x) { }
14. }
15. }
```

- A. Compiler error at line 9.
- B. An exception is thrown at line 9.
- C. An exception is thrown at line 10.
- D. No compiler error and no exception.

19. Which of the following are valid mode strings for the `RandomAccessFile` constructor? (Choose all that apply.)

- A. "r"
- B. "ro"
- C. "rw"
- D. "rws"
- E. "rwd"

20. Which of the following are valid arguments to the `DataInputStream` constructor?

- A. `File`
- B. `FileReader`
- C. `FileInputStream`
- D. `RandomAccessFile`

## Questions

1. Given the following:



```
public enum Wallpaper {
 BROWN, BLUE, YELLOW;
}
```

Which of the following are legal?

- A. enum PatternedWallpaper extends Wallpaper  
    { STRIPES, DOTS, PLAIN;  
    }
- B. Wallpaper wp = Wallpaper.BLUE;
- C. Wallpaper wp =  
    new Wallpaper(Wallpaper.BLUE);
- D. void aMethod(Wallpaper wp) {  
    System.out.println(wp);  
    }
- E. int hcode =  
    Wallpaper.BLUE.hashCode();

2. Given the following:

```
package pack;

class Sploo {
 public int a;
 public static int b;
 int c;
 static int d;

 public void eee() { }
 public static void fff() { }
}
```

Which of the following features of class Sploo may be accessed by a class, in package pack, as a result of the following import?

```
import static pack.Sploo.*;
```

- A. a
- B. b
- C. c
- D. d
- E. eee()
- F. fff()



3. Given the following:

```
public abstract class Abby {
 abstract provideMe();
}

public class SubAbby extends Abby { }
```

Which statements are true?

- A. Abby generates a compiler error.
  - B. SubAbby generates a compiler error.
  - C. If SubAbby were declared abstract, it would compile without error.
  - D. If SubAbby were declared abstract, it could be instantiated.
  - E. Abby is a legal type for variables.
4. Given the following code:
- ```
class Xxx {
    int[] ages;
    int[] heights = new int[10];
}
```
- A. Which statements are true?
 - B. ages is initialized to null.
 - C. ages is initialized to a reference to an array with zero elements.
 - D. heights is initialized to null.
 - E. heights is initialized to a reference to an array with zero elements.
 - F. heights is initialized to a reference to an array with 10 elements.
5. Given a class with a public variable **theTint** of type **Color**, which of the following methods are consistent with the JavaBeans naming standards?
- A. `public Color getColor()`
 - B. `public Color getTint()`
 - C. `public Color getTheTint()`
 - D. `public Color gettheTint()`
 - E. `public Color get_theTint()`
6. Which of the following statements are true regarding the following method?
- ```
void callMe(String... names) { }
```
- A. It doesn't compile.
  - B. Within the method, names is an array containing Strings.

- c. Within the method, `names` is a list containing `Strings`.
- d. The method may be called only from within the enclosing class.

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7. Given the following:

```
public class Food { }
public class Fruit extends Food { }
public class Citrus extends Fruit { }
public class Pomelo extends Citrus { }
public class SuperDuper {
 public Fruit feedMe() { return new Fruit(); }
}
```

```
public class Subby extends SuperDuper {
 public ????? feedMe() { return new Pomelo (); }
}
```

Which of the following are legal return types for feedMe() in class Subby?

- A. Object
- B. Food
- C. Fruit
- D. Citrus
- E. Pomelo

8. Given the following class:

```
class A extends java.util.Vector {
 private A(int x) { super(x); }
}
```

Which statements are true?

- A. The compiler creates a default constructor with public access.
- B. The compiler creates a default constructor with protected access.
- C. The compiler creates a default constructor with default access.
- D. The compiler creates a default constructor with private access.
- E. The compiler does not create a default constructor.

9. Which of the following types are legal arguments of a switch statement?

- A. enums
- B. bytes
- C. longs
- D. floats
- E. strings

10. Given the following:

```
int[] ages = { 9, 41, 49 };
int sum = 0;
```

Which of the following are legal ways to add the elements of the array?

- A. `for (int i=0; i<ages.length; i++) sum += ages[i];`
- B. `for (int i=0; i<=ages.length; i++) sum += ages[i];`
- C. `for (int i:ages) sum += i;`
- D. `sum += ages[int i:ages];`

11. Which lines check that `x` is equal to four? Assume assertions are enabled at compile time and runtime.

- A. `assert x == 4;`
- B. `assert x != 4;`
- C. `assert x == 4 : "x is not 4";`
- D. `assert x != 4 : "x is not 4";`

12. Which are appropriate uses of assertions?

- A. Checking preconditions in a private method
- B. Checking postconditions in a private method
- C. Checking preconditions in a public method
- D. Checking postconditions in a public method

13. `EOFException` and `ObjectStreamException` both extend `IOException`.

`NotSerializableException` extends `ObjectStreamException`.

`AWTException` does not extend any of these. All are checked exceptions. Suppose class `AClass` has a method `callMe()` whose declaration is

```
void callMe() throws
 ObjectOutputStreamException
```

Which of the following may appear in a subclass of `AClass`?

- A. `void callMe()`
- B. `void callMe() throws IOException`
- C. `void callMe() throws NotSerializableException`
- D. `void callMe() throws ObjectOutputStreamException, AWTException`

14. `ObjectStreamException` extends `IOException`. `NotSerializableException` extends `ObjectStreamException`. `AWTException` does not extend any of these. All are checked exceptions. The `callMe()` method throws `NotSerializableException`. What does the following code print out? Choose all lines that are printed.

```
try { callMe();
 System.out.println("I threw");
}
catch (ObjectStreamException x) {
 System.out.println("Object stream");
}
catch (IOException x) {
 System.out.println("IO");
}
catch (Exception x) {
 System.out.println("Exception");
}
finally {
 System.out.println("Finally");
}
```

- A. I threw
  - B. Object Stream
  - C. IO
  - D. Exception
  - E. Finally
15. While testing some code that you are developing, you notice that an `ArrayIndexOutOfBoundsException` is thrown. What is the appropriate reaction?
- A. Enclose the offending code in a `try` block, with a `catch` block for `ArrayIndexOutOfBoundsException` that does nothing.
  - B. Enclose the offending code in a `try` block, with a `catch` block for `ArrayIndexOutOfBoundsException` that prints out a descriptive message.
  - C. Declare that the method that contains the offending code throws `ArrayIndexOutOfBoundsException`.
  - D. None of the above.

16. How is `IllegalArgumentException` used? (Choose all correct options.)
- A. It is thrown by the JVM when a method is called with incompatible argument types.
  - B. It is thrown by the JVM to indicate arithmetic overflow.
  - C. It is thrown by certain methods of certain core Java classes to indicate that preconditions have been violated.
  - D. It should be used by programmers to indicate that preconditions of public methods have been violated.
  - E. It should be used by programmers to indicate that preconditions of nonpublic methods have been violated.
17. Suppose `shorty` is a `short` and `wrapped` is a `Short`. Which of the following are legal Java statements? (Choose all correct options.)
- A. `shorty = wrapped;`
  - B. `wrapped = shorty;`
  - C. `shorty = new Short((short)9);`
  - D. `shorty = 9;`
18. Which of the following statements are true? (Choose all correct options.)
- A. `StringBuilder` encapsulates a mutable string.
  - B. `StringBuilder` is threadsafe.
  - C. `StringBuffer` is threadsafe.
  - D. `StringBuffer` is generally faster than `StringBuilder`.
19. Suppose you know that a file named `aaa` was created by a Java program that used a `DataOutputStream`. The file contains 10 doubles, followed by a UTF string. Which of the following code snippets read the string correctly? Assume all code exists in an environment that legally handles `IOException`. (Choose all correct options.)
- A. 

```
RandomAccessFile raf =
 new RandomAccessFile("aaa", "r");
for (int i=0; i<10; i++)
 raf.readDouble();
String s = raf.readUTF();
```
  - B. 

```
RandomAccessFile raf =
 new RandomAccessFile("aaa", "r");
raf.seek(10*8);
String s = raf.readUTF();
```
  - C. 

```
FileReader fr = new
FileReader(fr); for (int i=0;
i<10*8; i++)
 fr.read();
```



```
String s = fr.readUTF();
```

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- D. `FileInputStream fis = new  
FileInputStream("aaa"); DataInputStream dis =  
new DataInputStream(fis); for (int i=0; i<10;  
i++)  
dis.readDouble();  
String s = dis.readUTF();`
- E. `FileInputStream fis = new  
FileInputStream("aaa"); DataInputStream dis =  
new DataInputStream(fis); dis.seek(10*8);  
String s = dis.readUTF();`
20. Suppose you want to read a file that was not created by a Java program. The file contains lines of 8-bit text, and the 8-bit encoding represents the local character set, as represented by the current default locale. The lines are separated by newline characters. Which strategy reads the file and produces Java strings?
- A. Create a `RandomAccessFile` instance and use its `readText()` method.
- B. Create a `RandomAccessFile` instance and use its `readUTF()` method.
- C. Create a `FileReader` instance. Pass it into the constructor of `LineNumberReader`. Use `LineNumberReader`'s `readLine()` method.
- D. Create a `FileInputStream` instance. Pass it into the constructor of `LineNumberReader`. Use `LineNumberReader`'s `readLine()` method.
- E. Create a `FileInputStream` instance. Pass it into the constructor of `DataInputStream`. Use `DataInputStream`'s `readLine()` method.
21. What interfaces can be implemented in order to create a class that can be serialized? (Choose all that apply.)
- A. No interfaces need to be implemented. All classes can be serialized.
- B. Have the class declare that it implements `java.io.Serializable`. There are no methods in the interface.
- C. Have the class declare that it implements `java.io.Serializable`, which defines two methods: `readObject` and `writeObject`.
- D. Have the class declare that it implements `java.io.Externalizable`, which defines two methods: `readObject` and `writeObject`.
- E. Have the class declare that it implements `java.io.Externalizable`, which defines two methods: `readExternal` and `writeExternal`.
22. Suppose you are writing a class that will provide custom deserialization. The class implements `java.io.Serializable` (not `java.io.Externalizable`). What access mode should the `readObject()` method have?

- A. public
- B. protected
- C. default
- D. private

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23. Suppose you want to create a class that compiles and can be serialized and deserialized without causing an exception to be thrown. Which statements are true regarding the class? (Choose all correct options.)
- A. If the class implements `java.io.Serializable` and does not implement `java.io.Externalizable`, it must have a no-args constructor.
  - B. If the class implements `java.io.Externalizable`, it must have a no-args constructor.
  - C. If the class implements `java.io.Serializable` and does not implement `java.io.Externalizable`, its nearest superclass that *doesn't* implement `Serializable` must have a no-args constructor.
  - D. If the class implements `java.io.Externalizable`, its nearest superclass that *doesn't* implement `Externalizable` must have a no-args constructor.
24. Suppose you want to use a `DateFormat` to format an instance of `Date`. What factors influence the string returned by `DateFormat`'s `format()` method?
- A. The operating system
  - B. The style, which is one of `SHORT`, `MEDIUM`, or `LONG`
  - C. The style, which is one of `SHORT`, `MEDIUM`, `LONG`, or `FULL`
  - D. The locale
25. How do you generate a string representing the value of a `float f` in a format appropriate for a locale `loc`?
- A. `NumberFormat nf =  
NumberFormat.getInstance(loc);  
String s = nf.format(f);`
  - B. `NumberFormat nf =  
new NumberFormat(loc);  
String s = nf.format(f);`
  - C. `NumberFormat nf =  
NumberFormat.getInstance();  
String s = nf.format(f, loc);`
  - D. `NumberFormat nf =  
new NumberFormat(loc);  
String s = nf.format(f, loc);`
26. Given the following code:
1. `String scanMe = "aeiou9876543210AEIOU";`
  2. `Scanner scanner = new Scanner(scanMe);`
  3. `String delim = ?????; // WHAT GOES HERE?`
  4. `scanner.useDelimiter(delim);`
  5. `while (scanner.hasNext())`

6. `System.out.println(scanner.next());`

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What code at line 3 produces the following output?  
aeiou AEIOU

- A. `String delim = "d+";`
  - B. `String delim = "\d+";`
  - C. `String delim = "\\d+";`
  - D. `String delim = "d*";`
  - E. `String delim = "\d*";`
  - F. `String delim = "\\d*";`
27. Which line prints double `d` in a left-justified field that is 20 characters wide, with 15 characters to the right of the decimal point?
- A. `System.out.format("%20.5f", d);`
  - B. `System.out.format("%20.15f", d);`
  - C. `System.out.format("%-20.5f", d);`
  - D. `System.out.format("%-20.15f", d);`
28. Suppose `MyThread` extends `java.lang.Thread`, and `MyRunnable` implements `java.lang Runnable` (but does not extend `Thread`). Both classes have no-args constructors. Which of the following cause a thread in the JVM to begin execution? (Choose all correct options.)
- A. `(new MyThread()).start();`
  - B. `(new MyThread()).run();`
  - C. `(new MyRunnable()).run();`
  - D. `(new Thread(new MyRunnable()))`
  - E. `.start();`
29. What will be the outcome when the following application is executed?
- ```
public class ThreadTest {
    public void newThread() {
        Thread t = new Thread() { public void
            run() { System.out.println("Going to
                sleep");
                try { sleep(5000);
                } catch (InterruptedException e) {}
                System.out.println("Waking up");
            }
        };
        t.start(); try {
```

```

        t.join();
    } catch (InterruptedException e) {}
    System.out.println("All done");
}
public static void main(String [] args)
{ new ThreadTest().newThread();
}
}

```

- A. The code prints "Going to sleep," then "Waking up," and then "All done."
- B. The code prints "All done," then "Going to sleep," and then "Waking up."
- C. The code prints "All done" only.
- D. The code prints "Going to sleep" and then "Waking up."
- E. The code does not compile.

30. Given the following class:

```

class Classy {
    synchronized void notStaticMethod() {
        for (long n=0; n<1000000000000L;
            n++)
            System.out.println(n);
    }

    synchronized static void staticMethod()
    { for (long n=0; n<1000000000000L; n++)
        System.out.println(n);
    }
}

```

Suppose thread A and thread B both have references to each of two instances of Classy. These references are named `classy1` and `classy2`. Which statements are true? (Choose all correct options.)

- A. If thread A is executing `classy1.staticMethod()`, then thread B may not execute `classy1.staticMethod()`.
- B. If thread A is executing `classy1.staticMethod()`, then thread B may not execute `classy2.staticMethod()`.
- C. If thread A is executing `classy1.notStaticMethod()`, then thread B may not execute `classy1.staticMethod()`.

- D. If thread A is executing `classy1.notStaticMethod()`, then thread B may not execute `classy1.notStaticMethod()`.
- E. If thread A is executing `classy1.notStaticMethod()`, then thread B may not execute `classy2.notStaticMethod()`.

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31. Suppose threads `aThread` and `bThread` are both accessing a shared object named `sharedOb`, and `aThread` has just executed:

```
sharedOb.wait();
```

What code can `bThread` execute in order to get `aThread` out of the waiting state, no matter what other conditions prevail?

- A. `aThread.notify();`
 - B. `aThread.notifyAll();`
 - C. `aThread.interrupt();`
 - D. `sharedOb.notify();`
 - E. `sharedOb.notifyAll();`
32. Suppose class `Car` has public variables `forceOnGasPedal` and `forceOnBrakePedal`, and a public method `respondToPedalChanges()`. Class `Driver` manipulates an instance of `Car` by changing the variables and then calling the method. Which statements are true? (Choose all that apply.)
- A. The `Car` and `Driver` classes are loosely coupled.
 - B. The `Car` and `Driver` classes are tightly coupled.
 - C. This degree of coupling is desirable.
 - D. This degree of coupling is undesirable.
33. Suppose class `Home` has methods `chopWood()` and `carryWater()`; it also has a method called `chopWoodAndCarryWater()`, which just calls the other two methods. Which statements are true? (Choose all that apply.)
- A. `chopWoodAndCarryWater()` is an example of appropriate cohesion.
 - B. `chopWoodAndCarryWater()` is an example of inappropriate cohesion.
 - C. `chopWoodAndCarryWater()` is an example of appropriate coupling.
 - D. `chopWoodAndCarryWater()` is an example of inappropriate coupling.
34. Suppose class `Lemon` extends class `Citrus`. Given the following code:

```
Lemon lem = new Lemon();
Citrus cit = new Citrus();
```

Which lines compile without error? (Choose all that apply.)

- A. `lem = cit;`
- B. `cit = lem;`
- C. `lem = (Lemon)cit;`
- D. `cit = (Citrus)lem;`
- E. `cit = (Object)lem;`

35. Suppose classes `Lemon` and `Grapefruit` extend class `Citrus`. Which statements are true regarding the following code?

1. `Grapefruit g = new Grapefruit();`
2. `Citrus c = (Citrus)g;`
3. `Lemon lem = (Lemon)c;`

- A. The cast in line 2 is not necessary.
- B. Line 3 causes a compiler error.
- C. The code compiles, and throws an exception at line 3.
- D. The code compiles and runs without throwing any exceptions.

36. Suppose class `aaa.Aaa` has a method called `callMe()`. Suppose class `bbb.Bbb`, which extends `aaa.Aaa`, wants to override `callMe()`. Which access modes for `callMe()` in `aaa.Aaa` will allow this?

- A. `public`
- B. `protected`
- C. `default`
- D. `private`

37. What happens when you try to compile the following code and run the `Zebra` application?

```
class Animal { float
    weight; Animal(float
    weight) {
        this.weight = weight;
    }
}
```

```
class Zebra extends Animal {
    public static void main(String[] args)
    { Animal a = new Animal(222.2f);
      Zebra z = new Zebra();
    }
}
```

- A. Class `Animal` generates a compiler error.
- B. Class `Zebra` generates a compiler error.
- C. The code compiles without error. The application throws an exception when the `Animal` constructor is called.
- D. The code compiles without error. The application throws an exception when the

Zebra
constructor is called.

- E. The code compiles and runs without error.

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38. Given the following code:

```
1. class Xyz {
2.     float f;
3.     Xyz() {
4.         ??? // What goes here?
5.     }
6.     Xyz(float f) {
7.         this.f = f;
8.     }
9. }
```

What code at line 4 results in a class that compiles?

- A. `super();`
 - B. `this(1.23f);`
 - C. `this(1.23f); super();`
 - D. `super(1.23f); this(1.23f);`
39. What relationship does the `extends` keyword represent?
- A. “is a”
 - B. “has a”
 - C. Polymorphism
 - D. Multivariance
 - E. Overloading
40. When should objects stored in a `Set` implement the `java.util.Comparable` interface?
- A. Always
 - B. When the `Set` is generic
 - C. When the `Set` is a `HashSet`
 - D. When the `Set` is a `TreeSet`
 - E. Never

41. Given the following class:

```
class Xyzzy { int a,
              b;

    public boolean equals(Object x) {
        Xyzzy that = (Xyzzy)x;
        return this.a == that.a;
    }
}
```

Which methods below honor the hash code contract?

- A. `public int hashCode() { return a; }`
- B. `public int hashCode() { return b; }`
- C. `public int hashCode() {
 return a+b;
}`
- D. `public int hashCode() {
 return a*b;
}`
- E. `public int hashCode() { return
 (int)Math.random();
}`

42. Give the following declarations:

```
Vector plainVec;  
Vector<String> fancyVec;
```

If you want a vector in which you know you will only store strings, what are the advantages of using fancyVec rather than plainVec?

- A. Attempting to add anything other than a string to fancyVec results in a compiler error.
- B. Attempting to add anything other than a string to fancyVec causes a runtime exception to be thrown.
- C. Attempting to add anything other than a string to fancyVec causes a checked exception to be thrown.
- D. Adding a string to fancyVec takes less time than adding one to plainVec.
- E. The methods of fancyVec are synchronized.

43. The declaration of the `java.util.Collection` interface is

```
interface Collection <E>
```

The `addAll()` method of that interface takes a single argument, which is a reference to a collection whose elements are compatible with E. What is the declaration of the `addAll()` method?

- A. `public boolean addAll(Collection c)`
- B. `public boolean
 addAll(Collection c extends E)`
- C. `public boolean
 addAll(Collection ? extends E)`
- D. `public boolean
 addAll(Collection<? extends E> c)`

44. The `java.util.Arrays` class has a `binarySearch(int[] arr, int key)` method. Which statements are true regarding this method? (Choose all that apply.)
- A. The method is static.
 - B. The return value is the index in the array of key.
 - C. The elements of the array must be sorted when the method is called.
 - D. After the method returns, the elements of the array are sorted, even if they weren't sorted before the call.

45. Given the following class:

```
package ocean; public
class Fish {
    protected int size;
    protected void swim() { }
}
```

Which of the following may appear in a subclass of `Fish` named `Tuna` that is not in the `ocean` package?

- A. `void swim() { }`
 - B. `public void swim() { }`
 - C. `size = 12;`
 - D. `(new Tuna()).size = 12;`
46. Given the following class:

```
public class App {
    public static void main(String[] args)
    { System.out.println(args.length);
    }
}
```

Assuming `App.class` is stored in an appropriate location in file `appjar.jar`, what is printed when you type the following command line?

`java -cp appjar.jar -ea App 1 2 3 4`

- A. 4
- B. 5
- C. 6
- D. 7
- E. 8
- F. 9

47. Given the following classes:

```
public class Wrapper {
    public int x;
}
```

```
public class Tester {
    private static void bump(int n, Wrapper
        w) { n++;
        w.x++;
    }
}
```

```
public static void main(String[] args)
{ int n = 10;
  Wrapper w = new Wrapper();
  w.x = 10; bump(n,
  w);
  // Now what are n and w.x?
}
}
```

When the application runs, what are the values of `n` and `w.x` after the call to `bump()` in the `main()` method?

- A. `n` is 10, `w.x` is 10
- B. `n` is 11, `w.x` is 10
- C. `n` is 10, `w.x` is 11
- D. `n` is 11, `w.x` is 11

48. When does the string created on line 2 become eligible for garbage collection?

1. `String s = "aaa";`
2. `String t = new String(s);`
3. `t += "zzz";`
4. `t = t.substring(0);`
5. `t = null;`

- A. After line 3
- B. After line 4
- C. After line 5
- D. The string created on line 2 does not become eligible for garbage collection in this

code.

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49. Suppose you want to run the following command line on a Windows system:

java -classpath somewhere;elsewhere aaa.bbb.MyApplication

On a Unix system the command line would be:

java -classpath somewhere:elsewhere aaa.bbb.MyApplication

Assume the CLASSPATH variable is not set. Which must be true in order for the application to run?

- A. Class MyApplication must contain the statement `package aaa.bbb;`.
 - B. Class MyApplication must be in a directory named `aaa` and must contain the statement `package bbb;`.
 - C. Class MyApplication must contain either the statement `package somewhere.aaa.bbb;` or the statement `package elsewhere.aaa.bbb;`.
 - D. The file `MyApplication.class` must be found either in `somewhere\aaa\bbb` or in `elsewhere\aaa\bbb`. (Substitute forward slashes for backslashes on a Unix system.)
50. What is $-15 \% -10$?
- A. 0
 - B. 5
 - C. 10
 - D. -5
 - E. -1

FPT University

Question Paper

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| | |
|-----------------|--|
| QN=1 (300) | is a set of java API for executing SQL statements. |
| a. | ODBC |
| b. | JDBC |
| c. | JAVADB |
| d. | None of the others |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|---------------|---|
| QN=2 (311) | method is used to wait for a client to initiate communications. |
| a. | wait() |

| | |
|--------------|----------|
| b. | accept() |
| c. | listen() |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=3 (7259) | drivers that are written partly in the Java programming language and partly in native code. These drivers use a native client library specific to the data source to which they connect. Again, because of the native code, their portability is limited. |
| a. | Type 2 |
| b. | Type 3 |

| | |
|--------------|--------|
| c. | Type 1 |
| d. | Type 4 |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|--|
| QN=4 (7261) | drivers that are pure Java and implement the network protocol for a specific data source. The client connects directly to the data source. |
| a. | Type 4 |
| b. | Type 3 |
| c. | Type 2 |
| d. | Type 1 |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|---|
| QN=5 (7260) | drivers that use a pure Java client and communicate with a middleware server using a database-independent protocol. The middleware server then communicates the client's requests to the data source. |
| a. | Type 3 |
| b. | Type 2 |
| c. | Type 1 |
| d. | Type 4 |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=6 (7258) | drivers that implement the JDBC API as a mapping to another data access API, such as ODBC. Drivers of this type are generally |
|----------------|---|

| | |
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| | dependent on a native library, which limits their portability. |
| a. | Type 1 |
| b. | Type 2 |
| c. | Type 3 |
| d. | Type 4 |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|--|
| QN=7 (1513) | <pre> 1. public class A { 2. public String doit(int x, int y) { 3. return "a"; 4. } 5. 6. public String doit(int... vals) { 7. return "b"; 8. } 9. }</pre> <p>Given:</p> <p>25. A a=new A();</p> <p>26. System.out.println(a.doit(4, 5));</p> <p>What is the result? (Choose one.)</p> |
| a. | Line 26 prints "a" to System.out. |
| b. | Line 26 prints "b" to System.out. |
| c. | An exception is thrown at line 26 at runtime. |
| d. | Compilation of class A will fail due to an error in line 6. |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|---|
| QN=8 (1525) | <pre> 1. public class A { 2. public void method1() { 3. B b=new B(); 4. b.method2(); </pre> |
|----------------|---|

| | |
|--------------|---|
| | <pre> 5. // more code here 6. } 7.} 1. public class B { 2. public void method2() { 3. C c=new C(); 4. c.method3(); 5. // more code here 6. } 7.} 1. public class C { 2. public void method3() { 3. // more code here 4. } 5.} 25. try { 26. A a=new A(); 27. a.method1(); 28. }catch (Exception e) { 29. System.out.print("an error occurred"); 30. } </pre> <p>Which two are true if a NullPointerException is thrown on line 3 of class C? (Choose two.)</p> |
| a. | The application will crash. |
| b. | The code on line 29 will be executed. |
| c. | The code on line 5 of class A will execute. |
| d. | The code on line 5 of class B will execute. |
| e. | The exception will be propagated back to line 27. |
| f. | |
| ANS: | BE |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|---------------|---|
| QN=9 (152) | <pre> 1. try { 2. // assume s is previously defined 3. URL u = new URL(s); 4. // in is an ObjectInputStream 5. Object o = in.readObject(); 6. System.out.println("Success"); </pre> |
|---------------|---|

| | |
|-----------------|--|
| | <pre> 7. } 8. catch (MalformedURLException e) { 9. System.out.println("Bad URL"); 10. } 11. catch (StreamCorruptedException e) { 12. System.out.println("Bad file contents"); 13. } 14. catch (Exception e) { 15. System.out.println("General exception"); 16. } 17. finally { 18. System.out.println("Doing finally part"); 19. } 20. System.out.println("Carrying on"); </pre> <p>Where: IOException extends Exception StreamCorruptedException extends IOException MalformedURLException extends IOException</p> <p>What lines are output if the constructor at line 3 throws a MalformedURLException? (Choose three.)</p> |
| a. | Success |
| b. | Bad URL |
| c. | Bad file contents |
| d. | General exception |
| e. | Doing finally part |
| f. | Carrying on |
| ANS: | BEF |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=10
(153)

```

1. try {
2.     // assume s is previously defined
3.     URL u = new URL(s);
4.     // in is an ObjectInputStream
5.     Object o = in.readObject();
6.     System.out.println("Success");
7. }
8. catch (MalformedURLException e) {
9.     System.out.println("Bad URL");
10. }

```

| | |
|--------------|--|
| | <pre> 11. catch (StreamCorruptedException e) { 12. System.out.println("Bad file contents"); 13. } 14. catch (Exception e) { 15. System.out.println("General exception"); 16. } 17. finally { 18. System.out.println("Doing finally part"); 19. } 20. System.out.println("Carrying on"); </pre> <p>What lines are output if the methods at lines 3 and 5 complete successfully without throwing any exceptions? (Choose three.)</p> |
| a. | Success |
| b. | Bad URL |
| c. | Bad file contents |
| d. | General exception |
| e. | Doing finally part |
| f. | Carrying on |
| ANS: | AEF |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=11
(1417)

```

10. interface Foo {
11.     int bar();
12. }
13.
14. public class Beta {
15.
16.     class A implements Foo {
17.         public int bar() { return 1; }
18.     }
19.
20.     public int fubar( Foo foo) { return foo.bar(); }
21.
22.     public void testFoo() {
23.
24.         class A implements Foo {
25.             public int bar() { return 2; }
26.         }
27.
28.         System.out.println( fubar( new A()));
29.     }

```


| | |
|--------------|---|
| | 30. 31. public static void main(String[] argv) { 32. new Beta().testFoo(); 33. } 34. } |
| | Which three statements are true? (Choose three.) |
| a. | Compilation fails. |
| b. | The code compiles and the output is 2. |
| c. | If lines 16, 17 and 18 were removed, compilation would fail. |
| d. | If lines 24, 25 and 26 were removed, compilation would fail. |
| e. | If lines 16, 17 and 18 were removed, the code would compile and the output would be 2. |
| f. | If lines 24, 25 and 26 were removed, the code would compile and the output would be 1. |
| ANS: | BEF |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=12
(1527)

```

10. public class ClassA {
11.     public void methodA() {
12.         ClassB classB = new ClassB();
13.         classB.getValue();
14.     }
15. } And:
20. class ClassB {
21.     public ClassC classC;
22.
23.     public String getValue() {
24.         return classC.getValue();
25.     }
26. } And:
30. class ClassC {
31.     public String value;
32.
33.     public String getValue() {
34.         value = "ClassB";

```

| | |
|--------------|---|
| | <pre> 35. return value; 36. } 37. }</pre> <p>ClassA a = new ClassA(); a.methodA();</p> <p>What is the result? (Choose one.)</p> |
| a. | Compilation fails. |
| b. | ClassC is displayed. |
| c. | The code runs with no output. |
| d. | An exception is thrown at runtime. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|-----------------|---|
| | |
| QN=13 (1515) | <pre> 11. public class Bootchy { 12. int bootch; 13. String snootch; 14. 15. public Bootchy() { 16. this("snootchy"); 17. System.out.print("first "); 18. } 19. 20. public Bootchy(String snootch) { 21. this(420, "snootchy"); 22. System.out.print("second "); 23. } 24. 25. public Bootchy(int bootch, String snootch) { 26. this.bootch = bootch; 27. this.snootch = snootch; 28. System.out.print("third "); 29. } 30. 31. public static void main(String[] args) { 32. Bootchy b = new Bootchy(); 33. System.out.print(b.snootch + " " + b.bootch); 34. } 35. }</pre> |

| | |
|--------------|---------------------------------------|
| | What is the result? (Choose one.) |
| a. | snootchy 420 third second first |
| b. | snootchy 420 first second third |
| c. | first second third snootchy 420 |
| d. | third second first snootchy 420 |
| e. | third first second snootchy 420 |
| f. | first second first third snootchy 420 |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|--|
| QN=14 (306) | A dialog prevents user input to other windows in the application until the dialog is closed. |
| a. | Modal |
| b. | Non-Modal |
| c. | Unmodel |
| d. | None of the above |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | No |

| | |
|----------------|--|
| QN=15 (239) | <p>A file is created with the following code:</p> <pre> 1. FileOutputStream fos = new FileOutputStream("datafile"); 2. DataOutputStream dos = new DataOutputStream(fos); 3. for (int i=0; i<500; i++) 4. dos.writeInt(i); </pre> <p>You would like to write code to read back the data from this file. Which solutions will work? (Choose two.)</p> |
| a. | Construct a FileInputStream, passing the name of the file. Onto the FileInputStream, chain a DataInputStream, and call its readInt() method. |
| b. | Construct a FileReader, passing the name of the file. Call the file reader's readInt() method. |
| c. | Construct a RandomAccessFile, passing the name of the file. Call the random access file's readInt() method. |

| | |
|--------------|--|
| d. | Construct a FileReader, passing the name of the file. Onto the FileReader, chain a DataInputStream, and call its readInt() method. |
| e. | |
| f. | |
| ANS: | AC |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|---|
| QN=16 (198) | A Java monitor must either extend Thread or implement Runnable. |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|--|
| QN=17 (196) | A monitor called mon has 10 threads in its waiting pool; all these waiting threads have the same priority. One of the threads is thr1. How can you notify thr1 so that it alone moves from the Waiting state to the Ready state? (Choose one.) |
| a. | Execute notify(thr1); from within synchronized code of mon. |
| b. | Execute mon.notify(thr1); from synchronized code of any object. |
| c. | Execute thr1.notify(); from synchronized code of any object. |
| d. | Execute thr1.notify(); from any code (synchronized or not) of any object. |
| e. | You cannot specify which thread will get notified. |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=18 (1426) | A programmer needs to create a logging method that can accept an arbitrary number of arguments. For example, it may be called in these |
|-----------------|--|

| | |
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| | ways: logIt("log message 1 "); logIt("log message2","log message3"); logIt("log message4", "log message5", "log message6"); Which declaration satisfies this requirement? (Choose one.) |
| a. | public void logIt(String * msgs) |
| b. | public void logIt(String [] msgs) |
| c. | public void logIt(String... msgs) |
| d. | public void logIt(String msg1, String msg2, String msg3) |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|---------------|--|
| QN=19 (45) | A signed data type has an equal number of non-zero positive and negative values available. |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|---|
| QN=20 (194) | A thread wants to make a second thread ineligible for execution. To do this, the first thread can call the yield() method on the second thread. |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |

| | |
|--------------|-----|
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|--|
| QN=21 (195) | <p>A thread's run() method includes the following lines:</p> <pre>1. try { 2. sleep(100); 3. } catch (InterruptedException e) { }</pre> <p>Assuming the thread is not interrupted, which one of the following statements is correct?</p> |
| a. | The code will not compile, because exceptions cannot be caught in a thread's run() method. |
| b. | At line 2, the thread will stop running. Execution will resume in, at most, 100 milliseconds. |
| c. | At line 2, the thread will stop running. It will resume running in exactly 100 milliseconds. |
| d. | At line 2, the thread will stop running. It will resume running some time after 100 milliseconds have elapsed. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|-----------------|---|
| QN=22 (7264) | A(n) object is used to submit a query to a database |
| a. | Command |
| b. | Connection |
| c. | Statement |
| d. | DriverManager |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|-----------------|--|
| QN=23 (7263) | A(n) object is used to obtain a Connection to a Database |
| a. | ConnectionManager |
| b. | DatabaseManager |
| c. | DriverManager |
| d. | JDBCManager |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|---------------|---|
| QN=24 (66) | After execution of the following code fragment, what are the values of the variables x, a, and b? 1. int x, a = 6, b = 7; 2. x = a++ + b++; |
| a. | x = 15, a = 7, b = 8 |
| b. | x = 15, a = 6, b = 7 |
| c. | x = 13, a = 7, b = 8 |
| d. | x = 13, a = 6, b = 7 |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=25
(1410)

Assume that country is set for each class. Given:

```

10. public class Money {
11.     private String country, name;
12.     public String getCountry() { return country; }
13. }
and:
24. class Yen extends Money {
25.     public String getCountry() { return super.country; }
26. }
28. class Euro extends Money {
29.     public String getCountry(String timeZone) {
30.         return super.getCountry();

```

| | |
|--------------|---|
| | 31. } |
| | 32. } |
| | Which two are correct? (Choose two.) |
| a. | Yen returns correct Country value. |
| b. | Euro returns correct Country value. |
| c. | An exception is thrown at runtime. |
| d. | Yen and Euro both return correct Country value. |
| e. | Compilation fails because of an error at line 25. |
| f. | Compilation fails because of an error at line 30. |
| ANS: | BE |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|---------------|---|
| QN=26 (46) | Choose the valid identifiers from those listed here. (Choose all that apply.) |
| a. | BigOilLongStringWithMeaninglessName |
| b. | \$int |
| c. | bytes |
| d. | \$1 |
| e. | finalist |
| f. | |
| ANS: | ABCDE |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=27
(1520)

Class SomeException:

```
1. public class SomeException {
2. }
```

Class A:

```
1. public class A {
2.     public void doSomething() { }
3. }
```

Class B:

```
1. public class B extends A {
2.     public void doSomething() throws SomeException { }
3. }
```


| | |
|--------------|--|
| | Which is true about the two classes? (Choose one.) |
| a. | Compilation of both classes will fail. |
| b. | Compilation of both classes will succeed. |
| c. | Compilation of class A will fail. Compilation of class B will succeed. |
| d. | Compilation of class B will fail. Compilation of class A will succeed. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|-----------------|--|
| QN=28 (1521) | <p>Class TestException:</p> <pre>1. public class TestException extends Exception { 2. }</pre> <p>Class A:</p> <pre>1. public class A { 2. 3. public String sayHello(String name) throws TestException { 4. 5. if(name == null) { 6. throw new TestException(); 7. } 8. 9. return "Hello "+ name; 10. } 11. 12. }</pre> <p>A programmer wants to use this code in an application:</p> <pre>45. A a=new A(); 46. System.out.println(a.sayHello("John"));</pre> <p>Which two are true? (Choose two.)</p> |
| a. | Class A will not compile. |
| b. | Line 46 can throw the unchecked exception TestException. |
| c. | Line 45 can throw the unchecked exception TestException. |
| d. | Line 46 will compile if the enclosing method throws a TestException. |
| e. | Line 46 will compile if enclosed in a try block, where TestException is caught. |
| f. | |
| ANS: | DE |
| MARK: | 2 |
| CHAPTER: | |

| | |
|--------------|-----|
| MIX CHOICES: | Yes |
|--------------|-----|

| | |
|---------------|--|
| QN=29 (50) | <p>Consider the following application:</p> <pre> 1. class Q6 { 2. public static void main(String args[]) { 3. Holder h = new Holder(); 4. h.held = 100; 5. h.bump(h); 6. System.out.println(h.held); 7. } 8. } 9. 10. class Holder { 11. public int held; 12. public void bump(Holder theHolder) { 13. theHolder.held++; 14. } 15. } 15. }</pre> <p>What value is printed out at line 6?</p> |
| a. | 0 |
| b. | 1 |
| c. | 100 |
| d. | 101 |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|---------------|--|
| QN=30 (51) | <p>Consider the following application:</p> <pre> 1. class Q7 { 2. public static void main(String args[]) { 3. double d = 12.3; 4. Decrementer dec = new Decrementer(); 5. dec.decrement(d); 6. System.out.println(d); 7. } 8. } 9. 10. class Decrementer {</pre> |
|---------------|--|

| | |
|--------------|--|
| | <pre> 11. public void decrement(double decMe) { 12. decMe = decMe - 1.0; 13. } 14. }</pre> <p>What value is printed out at line 6?</p> |
| a. | 0.0 |
| b. | 1.0 |
| c. | 12.3 |
| d. | 11.3 |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|--|
| QN=31 (173) | <p>Consider the following class definition:</p> <pre> 1. public class Test extends Base { 2. public Test(int j) { 3. } 4. public Test(int j, int k) { 5. super(j, k); 6. } 7. }</pre> <p>Which of the following are legitimate calls to construct instances of the Test class? (Choose two.)</p> |
| a. | Test t = new Test(); |
| b. | Test t = new Test(1); |
| c. | Test t = new Test(1, 2); |
| d. | Test t = new Test(1, 2, 3); |
| e. | Test t = (new Base()).new Test(1); |
| f. | |
| ANS: | BC |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=32 (174) | <p>Consider the following class definition:</p> <pre> 1. public class Test extends Base { 2. public Test(int j) { 3. } 4. public Test(int j, int k) {</pre> |
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| | <pre> 5. super(j, k); 6. } 7. }</pre> <p>Which of the following forms of constructor must exist explicitly in the definition of the Base class? Assume Test and Base are in the same package. (Choose two.)</p> |
| a. | Base() { } |
| b. | Base(int j) { } |
| c. | Base(int j, int k) { } |
| d. | Base(int j, int k, int l) { } |
| e. | |
| f. | |
| ANS: | AC |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=33 (131) | <p>Consider the following class:</p> <pre> 1. class Cruncher { 2. void crunch(int i) { 3. System.out.println("int version"); 4. } 5. void crunch(String s) { 6. System.out.println("String version"); 7. } 8. 9. public static void main(String args[]) { 10. Cruncher crun = new Cruncher(); 11. char ch = 'p'; 12. crun.crunch(ch); 13. } 14. }</pre> <p>Which of the following statements is true? (Choose one.)</p> |
| a. | Line 5 will not compile, because void methods cannot be overridden. |
| b. | Line 12 will not compile, because no version of crunch() takes a char argument. |
| c. | The code will compile but will throw an exception at line 12. |
| d. | The code will compile and produce the following output: int version. |
| e. | The code will compile and produce the following output: String version. |
| f. | |
| ANS: | D |
| MARK: | 2 |
| CHAPTER: | |
| MIX | Yes |

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| CHOICES: | |
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| QN=34 (172) | <p>Consider the following classes, declared in separate source files:</p> <pre> 1. public class Base { 2. public void method(int i) { 3. System.out.print("Value is " + i); 4. } 5. } 1. public class Sub extends Base { 2. public void method(int j) { 3. System.out.print("This value is " + j); 4. } 5. public void method(String s) { 6. System.out.print("I was passed " + s); 7. } 8. public static void main(String args[]) { 9. Base b1 = new Base(); 10. Base b2 = new Sub(); 11. b1.method(5); 12. b2.method(6); 13. } 14. }</pre> <p>What output results when the main method of the class Sub is run?(Choose one.)</p> |
| a. | Value is 5Value is 6 |
| b. | This value is 5This value is 6 |
| c. | Value is 5This value is 6 |
| d. | This value is 5Value is 6 |
| e. | I was passed 5I was passed 6 |
| f. | |
| ANS: | C |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=35 (133) | <p>Consider the following code. Which line will not compile? (Choose one.)</p> <pre> 1. Object ob = new Object(); 2. String[] stringarr = new String[50]; 3. Float floater = new Float(3.14f); 4. ob = stringarr;</pre> |
|----------------|---|

| | |
|--------------|---|
| | 5. ob = stringarr[5]; 6. floater = ob; 7. ob = floater; |
| a. | Line 4 |
| b. | Line 5 |
| c. | Line 6 |
| d. | Line 7 |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=36 (156) | <p>Consider the following code:</p> <pre> 1. public class Assertification { 2. public static void main(String[] args) { 3. assert args.length == 0; 4. } 5. }</pre> <p>Which of the following conditions must be true in order for the code to throw an AssertionError? Assume you are using release 5.0. (Choose two.)</p> |
| a. | The source code must be compiled with the -source 1.5 flag. |
| b. | The application must be run with the -enableassertions flag or another assertionenabling flag. |
| c. | The args array must have exactly zero elements. |
| d. | The args array must have one or more elements. |
| e. | |
| f. | |
| ANS: | BD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=37
(64)

Consider the following code:

```

1. StringBuffer sbuf = new StringBuffer();
2. sbuf = null;
3. System.gc();
```

| | |
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| | Choose true statement. (Choose one.) |
| a. | After line 2 executes, the StringBuffer object is garbage collected. |
| b. | After line 3 executes, the StringBuffer object is garbage collected. |
| c. | After line 2 executes, the StringBuffer object is eligible for garbage collection. |
| d. | After line 3 executes, the StringBuffer object is eligible for garbage collection. |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=38 (135) | <p>Consider the following code:</p> <pre> 1. Cat sunflower; 2. Washer wawa; 3. SwampThing pogo; 4. 5. sunflower = new Cat(); 6. wawa = sunflower; 7. pogo = (SwampThing)wawa; </pre> <p>Which of the following statements is true? (Choose one.) Where: Mammal extends Animal Cat, SwampThing extends Mammal Cat implements Washer</p> |
| a. | Line 6 will not compile; an explicit cast is required to convert a Cat to a Washer. |
| b. | Line 7 will not compile, because you cannot cast an interface to a class. |
| c. | The code will compile and run, but the cast in line 7 is not required and can be eliminated. |
| d. | The code will compile but will throw an exception at line 7, because runtime conversion from an interface to a class is not permitted. |
| e. | The code will compile but will throw an exception at line 7, because the runtime class of wawa cannot be converted to type SwampThing. |
| f. | |
| ANS: | E |
| MARK: | 2 |
| CHAPTER: | |
| MIX | Yes |

CHOICES:

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| QN=39 (134) | <p>Consider the following code:</p> <pre> 1. Dog rover, fido; 2. Animal anim; 3. 4. rover = new Dog(); 5. anim = rover; 6. fido = (Dog)anim; </pre> <p>Where: Mammal extends Animal Dog extends Mammal</p> <p>Which of the following statements is true? (Choose one.)</p> |
| a. | Line 5 will not compile. |
| b. | Line 6 will not compile. |
| c. | The code will compile but will throw an exception at line 6. |
| d. | The code will compile and run. |
| e. | The code will compile and run, but the cast in line 6 is not required and can be eliminated. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=40 (147) | <p>Consider the following code:</p> <pre> 1. for (int i = 0; i < 2; i++) { 2. for (int j = 0; j < 3; j++) { 3. if (i == j) { 4. continue; 5. } 6. System.out.println("i = " + i + " j = " + j); 7. } 8. } </pre> <p>Which lines would be part of the output? (Choose four.)</p> |
| a. | i = 0 j = 0 |
| b. | i = 0 j = 1 |
| c. | i = 0 j = 2 |
| d. | i = 1 j = 0 |
| e. | i = 1 j = 1 |
| f. | i = 1 j = 2 |

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| ANS: | BCDF |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=41 (148) | <p>Consider the following code:</p> <pre> 1. outer: for (int i = 0; i < 2; i++) { 2. for (int j = 0; j < 3; j++) { 3. if (i == j) { 4. continue outer; 5. } 6. System.out.println("i = " + i + " j = " + j); 7. } 8. }</pre> <p>Which lines would be part of the output? (Choose one.)</p> |
| a. | i = 0 j = 0 |
| b. | i = 0 j = 1 |
| c. | i = 0 j = 2 |
| d. | i = 1 j = 0 |
| e. | i = 1 j = 1 |
| f. | i = 1 j = 2 |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=42 (136) | <p>Consider the following code:</p> <pre> 1. Raccoon rocky; 2. SwampThing pogo; 3. Washer w; 4. 5. rocky = new Raccoon(); 6. w = rocky; 7. pogo = w;</pre> <p>Which of the following statements is true? (Choose one.) Where: Mammal extends Animal Dog, Raccoon, Swamp Thing extends Mammal Raccoon implements Washer</p> |
| a. | Line 6 will not compile; an explicit cast is required to convert a Raccoon to |

| | |
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| | a Washer. |
| b. | Line 7 will not compile; an explicit cast is required to convert a Washer to a SwampThing. |
| c. | The code will compile and run. |
| d. | The code will compile but will throw an exception at line 7, because runtime conversion from an interface to a class is not permitted. |
| e. | The code will compile but will throw an exception at line 7, because the runtime class of w cannot be converted to type SwampThing. |
| f. | |
| ANS: | B |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=43 (175) | <p>Consider the following definition:</p> <pre> 1. public class Outer { 2. public int a = 1; 3. private int b = 2; 4. public void method(final int c) { 5. int d = 3, f=10; 6. class Inner { 7. private void iMethod(int e) { 8. 9. } 10. } 11. } 12. }</pre> <p>Which variables can be referenced at line 8? (Choose four.)</p> |
| a. | a |
| b. | b |
| c. | c |
| d. | d |
| e. | e |
| f. | f |
| ANS: | ABCE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=44 | Consider the following line of code: |
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| (49) | <pre>int[] x = new int[25];</pre> <p>After execution, which statements are true? (Choose two.)</p> |
| a. | x[24] is 0 |
| b. | x[24] is undefined |
| c. | x[25] is 0 |
| d. | x[0] is null |
| e. | x.length is 25 |
| f. | |
| ANS: | AE |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=45 (169) | <p>Consider these classes, defined in separate source files:</p> <pre> 1. public class Test1 { 2. public float aMethod(float a, float b) throws IOException { .. } 3. } 1. public class Test2 extends Test1 { 2. 3. } </pre> <p>Which of the following methods would be legal (individually) at line 2 in class Test2? (Choose two)</p> |
| a. | float aMethod(float a, float b) {...} |
| b. | public int aMethod(int a, int b) throws Exception {...} |
| c. | public float aMethod(float a, float b) throws Exception {...} |
| d. | public float aMethod(float p, float q) {...} |
| e. | |
| f. | |
| ANS: | BD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=46
(167)

Consider this class:

```

1. public class Test1 {
2.     public float aMethod(float a, float b) {

```

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| | <pre> 3. } 4. 5. }</pre> <p>Which of the following methods would be legal if added (individually) at line 4? (Choose three.)</p> |
| a. | <code>public int aMethod(int a, int b) { }</code> |
| b. | <code>public float aMethod(float a, float b) { }</code> |
| c. | <code>public float aMethod(float a, float b, int c) throws Exception { }</code> |
| d. | <code>public float aMethod(float c, float d) { }</code> |
| e. | <code>private float aMethod(int a, int b, int c) { }</code> |
| f. | |
| ANS: | ACE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=47 (1517) | <p>Give:</p> <pre> 11. public static Iterator reverse(List list) { 12. Collections.reverse(list); 13. return list.iterator(); 14. } 15. public static void main(String[] args) { 16. List list = new ArrayList(); 17. list.add(" 1"); list.add("2"); list.add("3"); 18. for (Object obj: reverse(list)) 19. System.out.print(obj + " "); 20. }</pre> <p>‘What is the result? (Choose one.)</p> |
| a. | 3, 2, 1, |
| b. | 1, 2, 3, |
| c. | Compilation fails. |
| d. | The code runs with no output. |
| e. | An exception is thrown at runtime. |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=48 (212) | Given a string constructed by calling <code>s = new String("xyzzzy")</code> , which of the calls modifies the string? (Choose one.) |
| a. | <code>s.append("aaa");</code> |
| b. | <code>s.trim();</code> |
| c. | <code>s.substring(3);</code> |
| d. | <code>s.replace('z', 'a');</code> |
| e. | <code>s.concat(s);</code> |
| f. | None of the above |
| ANS: | F |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=49 (231) | Given arrays <code>a1</code> and <code>a2</code> , which call returns true if <code>a1</code> and <code>a2</code> have the same length, and <code>a1[i].equals(a2[i])</code> for every legal index <code>i</code> ? (Choose one.) |
| a. | <code>java.util.Arrays.equals(a1, a2);</code> |
| b. | <code>java.util.Arrays.compare(a1, a2);</code> |
| c. | <code>java.util.List.compare(a1, a2);</code> |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=50 (248) | <p>Given the following class:</p> <pre>public class Xyz implements java.io.Serializable { public int iAmPublic; private int iAmPrivate; static int iAmStatic; transient int iAmTransient; volatile int iAmVolatile; }</pre> <p>Assuming the class does not perform custom serialization, which fields are written when an instance of <code>Xyz</code> is serialized? (Choose three.)</p> |
| a. | <code>iAmPublic</code> |
| b. | <code>iAmPrivate</code> |
| c. | <code>iAmStatic</code> |
| d. | <code>iAmTransient</code> |

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| e. | iAmVolatile |
| f. | |
| ANS: | ABE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=51 (113) | <p>Given the following code, and making no other changes, which combination of access modifiers (public, protected, or private) can legally be placed before aMethod() on line 3 and be placed before aMethod() on line 8? (Choose one.)</p> <pre> 1. class SuperDuper 2. { 3. void aMethod() { } 4. } 5. 6. class Sub extends SuperDuper 7. { 8. void aMethod() { } 9. }</pre> |
| a. | line 3: public; line 8: private |
| b. | line 3: protected; line 8: private |
| c. | line 3: default; line 8: private |
| d. | line 3: private; line 8: protected |
| e. | line 3: public; line 8: protected |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=52 (187) | <p>Given the following code, which of the following will compile? (Choose three.)</p> <pre>enum Spice { NUTMEG, CINNAMON, CORIANDER, ROSEMARY; }</pre> |
| a. | Spice sp = Spice.NUTMEG; Object ob = sp; |
| b. | Spice sp = Spice.NUTMEG; Object ob = (Object)sp; |
| c. | Object ob = new Object(); Spice sp = ob |
| d. | Object ob = new Object(); Spice sp = (Spice)ob; |
| e. | String ob = new String(); Spice sp = ob; |
| f. | |

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| ANS: | ABD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=53 (224) | Given the following: List<String> names = new ArrayList<String>(); which of the following are legal? (Choose two.) |
| a. | Iterator<String> iter = names.iterator(); |
| b. | for (String s:names) |
| c. | while (String s:names) |
| d. | |
| e. | |
| f. | |
| ANS: | AB |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=54 (1524) | Given: 11. static class A { 12. void process() throws Exception { throw new Exception(); } 13. } 14. static class B extends A { 15. void process() { System.out.println("B "); } 16. } 17. public static void main(String[] args) { 18. A a=new B(); 19. a.process(); 20. } What is the result? (Choose one.) |
| a. | B |
| b. | The code runs with no output. |
| c. | An exception is thrown at runtime. |
| d. | Compilation fails because of an error in line 15. |
| e. | Compilation fails because of an error in line 18. |
| f. | Compilation fails because of an error in line 19. |
| ANS: | F |

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| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=55 (1407) | <p>Given:</p> <pre>public class Bar { public static void main(String [] args) { int x =5; boolean b1 = true; boolean b2 = false; if((x==4) && !b2) System.out.print("1 "); System.out.print("2 "); if ((b2 = true) && b1) System.out.print("3"); } }</pre> <p>What is the result? (Choose one.)</p> |
| a. | 2 |
| b. | 3 |
| c. | 1 2 |
| d. | 2 3 |
| e. | 1 2 3 |
| f. | Compilation fails. |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=56 (1418) | <p>Given:</p> <pre>1. public interface A { 2. String DEFAULT_GREETING = "Hello World"; 3. public void method1(); 4. }</pre> <p>A programmer wants to create an interface called B that has A as its parent. Which interface declaration is correct? (Choose one.)</p> |
| a. | public interface B extends A { } |
| b. | public interface B implements A { } |

| | |
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| c. | public interface B instanceof A { } |
| d. | public interface B inheritsFrom A { } |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=57 (1420) | <p>Given:</p> <pre> 10. abstract public class Employee { 11. protected abstract double getSalesAmount(); 12. public double getCommision() { 13. return getSalesAmount() * 0.15; 14. } 15. } 16. class Sales extends Employee { 17. // insert method here 18. }</pre> <p>Which two methods, inserted independently at line 17, correctly complete the Sales class? (Choose two.)</p> |
| a. | double getSalesAmount() { return 1230.45; } |
| b. | public double getSalesAmount() { return 1230.45; } |
| c. | private double getSalesAmount() { return 1230.45; } |
| d. | protected double getSalesAmount() { return 1230.45; } |
| e. | |
| f. | |
| ANS: | BD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=58
(1530)

Given:

```

10. class MakeFile {
11.     public static void main(String[] args) {
12.         try {
13.             File directory = new File("d");
14.             File file = new File(directory,"f");
15.             if(!file.exists()) {
```

| | |
|--------------|---|
| | <pre> 16. file.createNewFile(); 17. } 18. }catch (IOException e) { 19. e.printStackTrace (); 20. } 21. } 22. }</pre> <p>The current directory does NOT contain a directory named “d.” Which three are true? (Choose three.)</p> |
| a. | Line 16 is never executed. |
| b. | An exception is thrown at runtime. |
| c. | Line 13 creates a File object named “d.” |
| d. | Line 14 creates a File object named “f.” |
| e. | Line 13 creates a directory named “d” in the file system. |
| f. | Line 16 creates a directory named “d” and a file ‘f’ within it in the file system. |
| ANS: | BCD |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=59 (1415) | <p>Given:</p> <pre> 10. class Nav{ 11. public enum Direction { NORTH, SOUTH, EAST, WEST } 12. } 13. public class Sprite{ 14. // insert code here 15. }</pre> <p>Which code, inserted at line 14, allows the Sprite class to compile? (Choose one.)</p> |
| a. | Direction d = NORTH; |
| b. | Nav.Direction d = NORTH; |
| c. | Direction d = Direction.NORTH; |
| d. | Nav.Direction d = Nav.Direction.NORTH; |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=60 (1416) | <p>Given:</p> <pre> 10. interface Foo { int bar(); } 11. public class Sprite { 12. public int fubar(Foo foo) { return foo.bar(); } 13. public void testFoo() { 14. fubar(15. // insert code here 16.); 17. } 18. }</pre> <p>Which code, inserted at line 15, allows the class Sprite to compile? (Choose one.)</p> |
| a. | Foo { public int bar() { return 1; } } |
| b. | new Foo { public int bar() { return 1; } } |
| c. | new Foo() { public int bar(){return 1; } } |
| d. | new class Foo { public int bar() { return 1; } } |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX | Yes |
| CHOICES: | |

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| QN=61 (1528) | <p>Given:</p> <pre> 10. public class ClassA { 11. public void count(int i) { 12. count(++i); 13. } 14. } And: 20. ClassA a = new ClassA(); 21. a.count(3);</pre> <p>Which exception or error should be thrown by the virtual machine? (Choose one.)</p> |
| a. | StackOverflowError |
| b. | NullPointerException |

| | |
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| c. | NumberFormatException |
| d. | IllegalArgumentException |
| e. | ExceptionInInitializerError |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=62 (1419) | <p>Given:</p> <pre> 11. public abstract class Shape { 12. int x; 13. int y; 14. public abstract void draw(); 15. public void setAnchor(int x, int y) { 16. this.x = x; 17. this.y = y; 18. } 19. } </pre> <p>and a class Circle that extends and fully implements the Shape class. Which is correct? (Choose one.)</p> |
| a. | Shape s = new Shape(); s.setAnchor(10,10); s.draw(); |
| b. | Circle c = new Shape(); c.setAnchor(10,10); c.draw(); |
| c. | Shape s = new Circle(); s.setAnchor(10,10); s.draw(); |
| d. | Shape s = new Circle(); s->setAnchor(10,10); s->draw(); |
| e. | Circle c = new Circle(); c.Shape.setAnchor(10,10); c.Shape.draw(); |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=63
(1425)

Given:

```

11. public static void main(String[] args) {
12.     Object obj = new int[] { 1,2,3 };
13.     int[] someArray = (int[])obj;
14.     for (int i: someArray) System.out.print(i + " ");
15. }

```

| | |
|--------------|---|
| | What is the result? (Choose one.) |
| a. | 1 2 3 |
| b. | Compilation fails because of an error in line 12. |
| c. | Compilation fails because of an error in line 13. |
| d. | Compilation fails because of an error in line 14. |
| e. | A ClassCastException is thrown at runtime. |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
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| QN=64 (1526) | <p>Given:</p> <pre> 11. public static void main(String[] args) { 12. try { 13. args=null; 14. args[0] = "test"; 15. System.out.println(args[0]); 16. } catch (Exception ex) { 17. System.out.println("Exception"); 18. } catch (NullPointerException npe) { 19. System.out.println("NullPointerException"); 20. } 21. }</pre> <p>What is the result? (Choose one.)</p> |
| a. | Test |
| b. | Exception |
| c. | Compilation fails. |
| d. | NullPointerException |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=65
(1421)

Given:

```
11. public static void parse(String str) {
```

| | |
|--------------|--|
| | <pre> 12. try { 13. float f= Float.parseFloat(str); 14. } catch (NumberFormatException nfe) { 15. f = 0; 16. } finally { 17. System.out.println(f); 18. } 19. } 20. public static void main(String[] args) { 21. parse("invalid"); 22. }</pre> <p>What is the result? (Choose one.)</p> |
| a. | 0.0 |
| b. | Compilation fails. |
| c. | A ParseException is thrown by the parse method at runtime. |
| d. | A NumberFormatException is thrown by the parse method at runtime. |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=66 (1532) | <p>Given:</p> <pre> 11. String test = "This is a test"; 12. String[] tokens = test.split("\s"); 13. System.out.println(tokens.length);</pre> <p>What is the result? (Choose one.)</p> |
| a. | 0 |
| b. | 1 |
| c. | 4 |
| d. | Compilation fails. |
| e. | An exception is thrown at runtime. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=67 (1519) | <p>Given:</p> <pre> 12. public class AssertStuff { 14. public static void main(String [] args) { 15. int x= 5; 16. int y= 7; 18. assert (x > y): "stuff"; 19. System.out.println("passed"); 20. } 21. }</pre> <p>And these command line invocations:</p> <pre>java AssertStuff java -ea AssertStuff</pre> <p>What is the result? (Choose one.)</p> |
| a. | Passed Stuff |
| b. | Stuff Passed |
| c. | passed An AssertionError is thrown with the word "stuff" added to the stack trace. |
| d. | passed An AssertionError is thrown without the word "stuff" added to the stack trace. |
| e. | passed An AssertionError is thrown with the word "stuff" added to the stack trace. |
| f. | passed An AssertionError is thrown without the word "stuff" added to the stack trace. |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=68 (1516) | <p>Given:</p> <pre> 12. public class Test { 13. public enum Dogs { collie, harrier}; 14. public static void main(String [] args) { 15. Dogs myDog = Dogs.collie; 16. switch (myDog) {</pre> |
|-----------------|---|

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|--------------|---|
| | <pre> 17. case collie: 18. System.out.print("collie "); 19. case harrier: 20. System.out.print("harrier "); 21. } 22. } 23. } </pre> <p>What is the result? (Choose one.)</p> |
| a. | collie |
| b. | harrier |
| c. | Compilation fails. |
| d. | collie harrier |
| e. | An exception is thrown at runtime. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=69 (1414) | <p>Given:</p> <pre> 13. public class Pass { 14. public static void main(String [] args) { 15. int x = 5; 16. Pass p = new Pass(); 17. p.doStuff(x); 18. System.out.print(" main x = "+ x); 19. } 20. 21. void doStuff(int x) { 22. System.out.print("doStuff x = "+ x++); 23. } 24. } </pre> <p>What is the result? (Choose one.)</p> |
| a. | Compilation fails. |
| b. | An exception is thrown at runtime. |
| c. | doStuff x = 6 main x = 6 |
| d. | doStuff x = 5 main x = 5 |
| e. | doStuff x = 5 main x = 6 |
| f. | doStuff x = 6 main x = 5 |
| ANS: | D |
| MARK: | 1 |

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| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=70 (1413) | <p>Given:</p> <pre> 13. public class Pass { 14. public static void main(String [] args) { 15. int x = 5; 16. Pass p = new Pass(); 17. p.doStuff(x); 18. System.out.print(" main x = "+ x); 19. } 20. 21. void doStuff(int x) { 22. System.out.print("doStuffx = "+ x++); 23. } 24. }</pre> <p>What is the result? (Choose one.)</p> |
| a. | Compilation fails. |
| b. | An exception is thrown at runtime. |
| c. | doStuffx = 6 main x = 6 |
| d. | doStuffx = 5 main x = 5 |
| e. | doStuffx = 5 main x = 6 |
| f. | doStuffx = 6 main x = 5 |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=71
(1409)

Given:

```

20. public class CreditCard {
22.     private String cardID;
23.     private Integer limit;
24.     public String ownerName;
26.     public void setCardInformation(String cardID,
27.         String ownerName,
28.         Integer limit) {
29.         this.cardID = cardID;
30.         this.ownerName = ownerName;
31.         this.limit = limit;

```

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|--------------|---|
| | 32. } |
| | 33. } |
| | Which is true? (Choose one.) |
| a. | The class is fully encapsulated. |
| b. | The code demonstrates polymorphism. |
| c. | The ownerName variable breaks encapsulation. |
| d. | The cardID and limit variables break polymorphism. |
| e. | The setCardInformation method breaks encapsulation. |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=72 (1412) | <p>Given:</p> <pre> 23. Object [] myObjects = { 24. new Integer(12), 25. new String("foo"), 26. new Integer(5), 27. new Boolean(true) 28. }; 29. java.util.Array.sort(myObjects); 30. for(int i=0; i<myObjects.length; i++) { 31. System.out.print(myObjects[i].toString()); 32. System.out.print(" "); 33. }</pre> <p>What is the result? (Choose one.)</p> |
| a. | Compilation fails due to an error in line 23. |
| b. | Compilation fails due to an error in line 29. |
| c. | A ClassCastException occurs in line 29. |
| d. | A ClassCastException occurs in line 31. |
| e. | The value of all four objects prints in natural order. |
| f. | |
| ANS: | B |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-------|--------|
| QN=73 | Given: |
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|--------------|--|
| (1408) | <pre> 31. // some code here 32. try { 33. // some code here 34. } catch (SomeException se) { 35. // some code here 36. } finally { 37. // some code here 38. } </pre> <p>Under which three circumstances will the code on line 37 be executed? (Choose three.)</p> |
| a. | The instance gets garbage collected. |
| b. | The code on line 33 throws an exception. |
| c. | The code on line 35 throws an exception. |
| d. | The code on line 31 throws an exception. |
| e. | The code on line 33 executes successfully. |
| f. | |
| ANS: | BCE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=74 (1522) | <p>Given:</p> <pre> 33. try { 34. // some code here 35. } catch (NullPointerException e1) { 36. System.out.print("a"); 37. } catch (RuntimeException e2) { 38. System.out.print("b"); 39. } finally { 40. System.out.print("c"); 41. } </pre> <p>What is the result if a NullPointerException occurs on line 34? (Choose one.)</p> |
| a. | c |
| b. | a |
| c. | ab |
| d. | ac |
| e. | bc |
| f. | abc |
| ANS: | D |

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| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=75 (1422) | <p>Given:</p> <pre>55. int []x= {1, 2,3,4, 5}; 56. int y[] =x; 57. System.out.println(y[2]);</pre> <p>Which is true? (Choose one.)</p> |
| a. | Line 57 will print the value 2. |
| b. | Line 57 will print the value 3. |
| c. | Compilation will fail because of an error in line 55. |
| d. | Compilation will fail because of an error in line 56. |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=76 (1518) | <p>Given:</p> <pre>8. public class test { 9. public static void main(String [] a) { 10. assert a.length == 1; 11. } 12. }</pre> <p>Which two will produce an AssertionError? (Choose two.)</p> |
| a. | java test |
| b. | java -ea test |
| c. | java test file1 |
| d. | java -ea test file1 |
| e. | java -ea test file1 file2 |
| f. | java -ea:test test file1 |
| ANS: | BE |
| MARK: | 1 |
| CHAPTER: | |
| MIX | Yes |

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| CHOICES: | |
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| QN=77 (1529) | <p>Given:</p> <pre> 1. public class TestString3 { 2. public static void main(String[] args) { 3. // insert code here 5. System.out.println(s); 6. } 7. }</pre> <p>Which two code fragments, inserted independently at line 3, generate the output 4247? (Choose two.)</p> |
| a. | String s = "123456789"; s = (s-"123").replace(1,3,"24") - "89"; |
| b. | StringBuffer s = new StringBuffer("123456789"); s.delete(0,3).replace(1,3, "24").delete(4,6); |
| c. | StringBuffer s = new StringBuffer("123456789"); s.substring(3,6).delete(1,3).insert(1, "24"); |
| d. | StringBuilder s = new StringBuilder("123456789"); s.substring(3,6).delete(1,2).insert(1, "24"); |
| e. | StringBuilder s = new StringBuilder("123456789"); s.delete(0,3).delete(1,3).delete(2,5).insert(1, "24"); |
| f. | |
| ANS: | BE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=78 (1514) | <p>Given:</p> <pre> 10. class Line { 11. public static class Point { } 12. } 13. 14. class Triangle { 15. // insert code here 16. }</pre> <p>Which code, inserted at line 15, creates an instance of the Point class defined in Line? (Choose one.)</p> |
| a. | Point p = new Point(); |
| b. | Line.Point p = new Line.Point(); |
| c. | The Point class cannot be instantiated at line 15. |
| d. | Line l = new Line() ; Point p = new l.Point(); |
| e. | |

| | |
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| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=79 (1406) | <p>Given:</p> <pre> 10. public class Bar { 11. static void foo(int...x) { 12. // insert code here 13. } 14. }</pre> <p>Which two code fragments, inserted independently at line 12, will allow the class to compile? (Choose two.)</p> |
| a. | <code>foreach(x) System.out.println(z);</code> |
| b. | <code>for(int z : x) System.out.println(z);</code> |
| c. | <code>while(x.hasNext()) System.out.println(x.next());</code> |
| d. | <code>for(int i=0; i< x.length; i++) System.out.println(x[i]);</code> |
| e. | |
| f. | |
| ANS: | BD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=80 (1405) | <p>Given:</p> <pre> 11. public interface Status { 12. /* insert code here */ int MY_VALUE = 10; 13. }</pre> <p>Which three are valid on line 12? (Choose three.)</p> |
| a. | <code>final</code> |
| b. | <code>static</code> |
| c. | <code>native</code> |
| d. | <code>public</code> |
| e. | <code>protected</code> |
| f. | <code>abstract</code> |
| ANS: | ABD |
| MARK: | 1 |
| CHAPTER: | |

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| MIX CHOICES: | Yes |
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| QN=81 (1523) | <p>Given:</p> <pre> class A { public void process() { System.out.print("A "); } public static void main(String[] args) { try { ((A)new B()).process(); } catch (Exception e) { System.out.print("Exception "); } } } class B extends A { public void process() throws RuntimeException { super.process(); if (true) throw new RuntimeException(); System.out.print("B"); } } </pre> <p>What is the result? (Choose one.)</p> |
| a. | Exception |
| b. | A Exception |
| c. | A Exception B |
| d. | A B Exception |
| e. | Compilation fails because of an error in line: public void process() throws RuntimeException |
| f. | Compilation fails because of an error in line: try { ((A)new B()).process(); } |
| ANS: | B |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=82 (209) | How can you ensure that multithreaded code does not deadlock? (Choose one.) |
| a. | Synchronize access to all shared variables. |
| b. | Make sure all threads yield from time to time. |
| c. | Vary the priorities of your threads. |
| d. | There is no single technique that can guarantee non-deadlocking code. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |

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| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=83 (52) | How can you force garbage collection of an object? (Choose one.) |
| a. | Garbage collection cannot be forced. |
| b. | Call <code>System.gc()</code> . |
| c. | Call <code>System.gc()</code> , passing in a reference to the object to be garbage-collected. |
| d. | Call <code>Runtime.gc()</code> . |
| e. | Set all references to the object to new values (null, for example). |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|---|
| QN=84 (208) | How do you prevent shared data from being corrupted in a multithreaded environment? (Choose one.) |
| a. | Mark all variables as synchronized. |
| b. | Mark all variables as volatile. |
| c. | Use only static variables. |
| d. | Access the variables only via synchronized methods. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=85 (236) | How do you use the <code>File</code> class to list the contents of a directory? (Choose one.) |
| a. | <code>String[] contents = myFile.list();</code> |
| b. | <code>File[] contents = myFile.list();</code> |
| c. | <code>StringBuilder[] contents = myFile.list();</code> |
| d. | The <code>File</code> class does not provide a way to list the contents of a directory. |
| e. | |
| f. | |
| ANS: | A |

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| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=86 (237) | How many bytes does the following code write to file dest? (Choose one.) <pre> 1. try { 2. FileOutputStream fos = new FileOutputStream("dest"); 3. DataOutputStream dos = new DataOutputStream(fos); 4. dos.writeInt(3); 5. dos.writeFloat(0.0001f); 6. dos.close(); 7. fos.close(); 8. } 9. catch (IOException e) { }</pre> |
| a. | 2 |
| b. | 8 |
| c. | 12 |
| d. | 16 |
| e. | The number of bytes depends on the underlying system. |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=87 (204) | How many locks does an object have? (Choose one.) |
| a. | One |
| b. | One for each method |
| c. | One for each synchronized method |
| d. | One for each non-static synchronized method |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|---------------|---|
| QN=88 (48) | If all three top-level elements occur in a source file, they must appear in which order? (Choose one.) |
| a. | Imports, package declarations, classes/interfaces/enums |
| b. | Classes/interfaces/enums, imports, package declarations |
| c. | Package declaration must come first; order for imports and class/interfaces/enum definitions is not significant |
| d. | Package declaration, imports, class/interface/enum definitions. |
| e. | Imports must come first; order for package declarations and class/interface/enum definitions is not significant |
| f. | |
| ANS: | D |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|--|
| QN=89 (123) | If class Y extends class X, the two classes are in different packages, and class X has a protected method called abby(), then any instance of Y may call the abby() method of any other instance of Y. |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

QN=90
(197)

If you attempt to compile and execute the following application, will it ever print out the message In xxx?

```

1. class TestThread3 extends Thread {
2.     public void run() {
3.         System.out.println("Running");
4.         System.out.println("Done");
5.     }
6.
7.     private void xxx() {
8.         System.out.println("In xxx");
9.     }

```

| | |
|--------------|---|
| | 10. 11. public static void main(String args[]) { 12. TestThread3 ttt = new TestThread3(); 13. ttt.xxx(); 14. ttt.start(); 12. } 13. } |
| a. | Yes |
| b. | No |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=91 (1877) | If you need a Set implementation that provides value-ordered iteration, which class should you use? (Choose one.) |
| a. | HashSet |
| b. | LinkedHashSet |
| c. | TreeSet |
| d. | |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=92 (1875) | In order for objects in a List to be sorted, those objects must implement which interface and method? (Choose one.) |
| a. | Comparable interface and its compareTo method. |
| b. | Comparable interface and its compare method |
| c. | Compare interface and its compareTo method |
| d. | Comparable interface and its equals method |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |

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| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=93 (218) | In the following code fragment, after execution of line 1, sbuf references an instance of the StringBuffer class. After execution of line 2, sbuf still references the same instance. 1. StringBuffer sbuf = new StringBuffer("FPT"); 2. sbuf.append("-University"); |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|---|
| QN=94 (217) | In the following code fragment, after execution of line 1, sbuf references an instance of the StringBuffer class. After execution of line 2, sbuf still references the same instance. 1. StringBuffer sbuf = new StringBuffer("FPT"); 2. sbuf.insert(3, "-University"); |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|--|
| QN=95 (130) | In the following code, what are the possible types for variable result? (Choose the most complete true answer.) |
|----------------|--|

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|--------------|---|
| | 1. byte b = 11; 2. short s = 13; 3. result = b * ++s; |
| a. | byte, short, int, long, float, double |
| b. | boolean, byte, short, char, int, long, float, double |
| c. | byte, short, char, int, long, float, double |
| d. | byte, short, char |
| e. | int, long, float, double |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|-----------------|--|
| QN=96 (7266) | Interface helps manage the connection between a Java program and a database. |
| a. | ResultSet |
| b. | DriverManager |
| c. | Statement |
| d. | Connection |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|---------------|--|
| QN=97 (76) | Is it possible to define a class called Thing so that the following method can return true under certain circumstances? boolean weird(Thing s) { Integer x = new Integer(5); return s.equals(x); } |
| a. | Yes |
| b. | No |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |

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|--------------|-----|
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=98 (205) | Is it possible to write code that can execute only if the current thread owns multiple locks? |
| a. | Yes |
| b. | No |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---------------------------------------|
| QN=99 (301) | JDBC supports _____ and _____ models. |
| a. | Single-tier and two-tier |
| b. | Two-tier and three-tier |
| c. | Three-tier and four-tier |
| d. | None of the others |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|----------------------------|
| QN=100 (305) | MVC is short call of _____ |
| a. | Model-View-Controller |
| b. | Multiple-View-Controller |
| c. | Metal-View-Controller |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |

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|--------------|-----|
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=101 (129) | <pre>public class Test{ public static void main(String[] args){ byte b = 2; byte b1 = 3; b = b * b1; System.out.println("b="+b); } }</pre> <p>What is the output?</p> |
| a. | b=6 |
| b. | No output because of compile error at line: <code>b = b * b1;</code> |
| c. | No output because of compile error at line: <code>System.out.println("b="+b);</code> |
| d. | No output because of compile error at line: <code>byte b = 2;</code> |
| e. | No output because of compile error at line: <code>byte b = 3;</code> |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

| | |
|----------------|---|
| QN=102 (77) | <pre>public class Test{ public static void main(String[] args){ Object ob1= new Object(); Object ob2= new Object(); if(ob1.equals(ob2)) System.out.println("ob1 equals ob2"); if(ob1==ob2) System.out.println("ob1==ob2"); System.out.println("Have a nice day!"); } }</pre> <p>What is the output?</p> |
| a. | ob1 equals ob2 Have a nice day! |
| b. | ob1==ob2 Have a nice day! |
| c. | Have a nice day! |
| d. | No output |

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| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=103 (4924) | <pre>public class Test{ public static void main(String[] args){ Object ob1= new Object(); Object ob2= ob1; if(ob1.equals(ob2)) System.out.println("ob1 equals ob2"); if(ob1==ob2) System.out.println("ob1==ob2"); System.out.println("Have a nice day!"); } }</pre> <p>What is the output?</p> |
| a. | ob1 equals ob2 ob1==ob2 Have a nice day! |
| b. | ob1 equals ob2 Have a nice day! |
| c. | ob1==ob2 Have a nice day! |
| d. | None of the above |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|------------------|--|
| QN=104 (4925) | <pre>public class Test{ public static void main(String[] args){ String s1 = "xyz"; String s2 = "xyz"; if (s1 == s2) System.out.println("Line 4"); if (s1.equals(s2)) System.out.println("Line 6"); }</pre> |
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| | <pre> } } </pre> <p>What is the output?</p> |
| a. | Line 4 Line 6 |
| b. | Line 4 |
| c. | Line 6 |
| d. | No output, compile error |
| e. | No output |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|---|--------------------------|
| <p>QN=105 (219)</p> <pre> public class Test{ public static void main(String[] args){ String s1 = "xyz"; String s2 = new String("xyz"); if (s1 == s2) System.out.println("Line 4"); if (s1.equals(s2)) System.out.println("Line 6"); } } </pre> <p>What is the output?</p> | |
| a. | Line 4 Line 6 |
| b. | Line 4 |
| c. | Line 6 |
| d. | No output, compile error |
| e. | No output |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |
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QN=106
(4926)

```

public class Test{
public static void main(String[] args){

```

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| | <pre>String s1 = "xyz"; String s2 = new String(s1); s2.intern(); if (s1 == s2) System.out.println("Line 4"); if (s1.equals(s2)) System.out.println("Line 6"); } }</pre> <p>What is the output?</p> |
| a. | Line 4 |
| b. | Line 6 |
| c. | Line 4 Line 6 |
| d. | No output, compile error |
| e. | No output |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=107 (220) | <pre>public class Test{ public static void main(String[] args){ String s1 = "xyz"; String s2 = new String(s1); s2=s2.intern(); if (s1 == s2) System.out.println("Line 4"); if (s1.equals(s2)) System.out.println("Line 6"); } }</pre> <p>What is the output? (choose 1)</p> |
| a. | Line 4 |
| b. | Line 6 |
| c. | Line 4 Line 6 |
| d. | No output, compile error |
| e. | No output |
| f. | |
| ANS: | C |

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| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|------------------|--|
| QN=108 (4941) | Select correct statement about RMI. (choose 1) |
| a. | allow programmers to develop distributed Java programs with the same syntax and semantics used for non-distributed programs. |
| b. | use object serialization to marshal and unmarshal parameters, supporting true object-oriented polymorphism. |
| c. | RMI applications are often comprised of two separate programs: a server and a client. |
| d. | All the above |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|------------------|---|
| QN=109 (4943) | Select correct statement(s) about remote class.(choose one) |
| a. | It must extend java.rmi.server.UnicastRemoteObject. |
| b. | It must implement the remote interface. |
| c. | It is the class whose methods provide services to clients. |
| d. | All the others choices |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=110 (4942) | Select correct statements about remote interface. (choose 1) |
| a. | A remote interface is an interface that describes the remotely accessible methods of a remote object. |
| b. | All remote interfaces must extend java.rmi.Remote. |
| c. | All methods in a remote interface must throw java.rmi.RemoteException |

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| d. | The type of a remote reference is a remote interface |
| e. | All the others choices |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=111 (4939) | Select INCORRECT statement about serialization. (choose 1) |
| a. | The process of writing an object is called serialization. |
| b. | To serialize an object, first create an instance of java.io.ObjectOutputStream. |
| c. | When an Object Output Stream serializes an object that contains references to another object, every referenced object is not serialized along with the original object. |
| d. | When an object is serialized, it will probably be deserialized by a different JVM. |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=112 (4940) | Select INCORRECT statement about deserialize. (choose 1) |
| a. | Any JVM that tries to deserialize an object must have access to that object's class definition. |
| b. | We use readObject() method of ObjectOutputStream class to deserialize. |
| c. | The readObject method deserializes the next object in the stream and traverses its references to other objects recursively to deserialize all objects that are reachable from it. |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=113 (4944) | Select incorrect statement about RMI server.(choose 1) |
| a. | An RMI server is an application that creates one or more remote objects and makes them available to clients. |
| b. | An RMI server performs two tasks: 1. Create an instance of the remote object. 2. Bind the remote object to a name. |
| c. | The RMI registry is a program that associates names with RMI services. A server specifies a name for every remote object it provides. |
| d. | A client accesses a remote object by specifying only the server name. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=114 (4938) | Select incorrect statement about ServerSocket class. (choose 1) |
| a. | The most useful form of the ServerSocket constructor is public ServerSocket(int portNumber) |
| b. | A server socket, on the other hand, makes itself available and then waits for clients to initiate connections. |
| c. | To make the new object available for client connections, call its accept() method, which returns an instance of ServerSocket |
| d. | There is no way to know how long the accept() call will take. |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=115 (4937) | Select incorrect statement about Socket class. (choose 1) |
| a. | The java.net.Socket class contains code that knows how to find and communicate with a server through UDP. |
| b. | One of its constructors is: public Socket(String servername, int portNumber) |

| | |
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| c. | You do not directly read from or write to a socket |
| d. | The java.net.Socket class contains code that knows how to find and communicate with a server through TCP. |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=116 (7257) | Select the correct statement about JDBC two-tier processing model. |
| a. | A user's commands are delivered to the database or other data source, and the results of those statements are sent back to the user. |
| b. | Two-tier is referred to as a client/server configuration, with the user's machine as the Server, and the machine housing the data source as the Client. |
| c. | User's commands are sent to a "middle tier" of services, which then sends the commands to the data source. |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=117 (7265) | SQL keyword _____ is followed by the selection criteria that specify the rows to select in a query |
| a. | FROM |
| b. | ORDER BY |
| c. | HAVING |
| d. | WHERE |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=118 (7262) | Statement objects return SQL query results as objects |
| a. | DataSet |
| b. | ResultSet |
| c. | RecordSet |
| d. | RowSet |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=119 (4927) | Study the statements: 1)When a JDBC connection is created, it is in auto-commit mode 2)Once auto-commit mode is disabled, no SQL statements will be committed until you call the method commit explicitly |
| a. | Only statement 1 is true |
| b. | Only statement 2 is true |
| c. | Both 1 and 2 are true |
| d. | Both 1 and 2 are not true |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=120 (160) | Suppose a method called finallyTest() consists of a try block, followed by a catch block, followed by a finally block. Assuming the JVM doesn't crash and the code does not execute a System.exit() call, under what circumstances will the finally block not begin to execute? (Choose one.) |
| a. | The try block throws an exception, and the catch block also throws an exception. |
| b. | The try block throws an exception that is not handled by the catch block. |
| c. | The try block throws an exception, and the catch block calls finallyTest() in a way that causes another exception to be thrown. |
| d. | If the JVM doesn't crash and the code does not execute a System.exit() call, the finally block will always execute. |
| e. | |

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| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=121 (56) | Suppose a source file contains a large number of import statements and one class definition. How do the imports affect the time required to load the class? (Choose one.) |
| a. | Class loading takes no additional time. |
| b. | Class loading takes slightly more time. |
| c. | Class loading takes significantly more time. |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=122 (55) | Suppose a source file contains a large number of import statements. How do the imports affect the time required to compile the source file? (Choose one.) |
| a. | Compilation takes no additional time. |
| b. | Compilation takes slightly more time. |
| c. | Compilation takes significantly more time. |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=123 (247) | Suppose class A extends Object; Class B extends A; and class C extends B. Of these, only class C implements java.io.Externalizable. Which of the following must be true in order to avoid an exception during deserialization of an instance of C? (Choose one.) |
| a. | A must have a no-args constructor. |

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| b. | B must have a no-args constructor. |
| c. | C must have a no-args constructor. |
| d. | There are no restrictions regarding no-args constructors. |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=124 (246) | Suppose class A extends Object; class B extends A; and class C extends B. Of these, only class C implements java.io.Serializable. Which of the following must be true in order to avoid an exception during deserialization of an instance of C? (Choose one.) |
| a. | A must have a no-args constructor. |
| b. | B must have a no-args constructor. |
| c. | C must have a no-args constructor. |
| d. | There are no restrictions regarding no-args constructors. |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=125 (122) | Suppose class A has a method called doSomething(), with default access. Suppose class B extends A and overrides doSomething(). Which access modes may not apply to B's version of doSomething()? (Choose one) |
| a. | public |
| b. | private |
| c. | protected |
| d. | Default |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=126 (117) | Suppose class Supe, in package packagea, has a method called doSomething(). Suppose class Subby, in package packageb, overrides doSomething(). What access modes may Subby's version of the method have? (Choose two.) |
| a. | public |
| b. | protected |
| c. | Default |
| d. | private |
| e. | |
| f. | |
| ANS: | AB |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=127 (190) | Suppose class X contains the following method: <pre>void doSomething(int a, float b) { ... }</pre> Which of the following methods may appear in class Y, which extends X? (Choose one.) |
| a. | public void doSomething(int a, float b) { ... } |
| b. | private void doSomething(int a, float b) { ... } |
| c. | public void doSomething(int a, float b) throws java.io.IOException { ... } |
| d. | private void doSomething(int a, float b) throws java.io.IOException { ... } |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=128 (119) | Suppose interface Inty defines five methods. Suppose class Classy declares that it implements Inty but does not provide implementations for any of the five interface methods. Which are true? (Choose two.) |
| a. | The class will not compile. |
| b. | The class will compile if it is declared public. |
| c. | The class will compile if it is declared abstract. |
| d. | The class may not be instantiated. |
| e. | |
| f. | |

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| ANS: | CD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=129 (222) | Suppose prim is an int and wrapped is an Integer. Which of the following are legal Java statements? (Choose one.) |
| a. | prim = wrapped; |
| b. | wrapped = prim; |
| c. | prim = new Integer(9); |
| d. | wrapped = 9; |
| e. | All the above |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=130 (158) | Suppose salaries is an array containing floats. Which of the following are valid loop control statements for processing each element of salaries? (Choose one.) |
| a. | for (float f:salaries) |
| b. | for (int i:salaries) |
| c. | for (float f::salaries) |
| d. | for (int i::salaries) |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=131 (139) | Suppose the declared type of x is a class, and the declared type of y is an interface. When is the assignment x = y; legal? (Choose one.) |
| a. | When the type of x is Object |
| b. | When the type of x is an array |
| c. | Always |
| d. | Never |
| e. | |

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| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=132 (140) | Suppose the type of xarr is an array of XXX, and the type of yarr is an array of YYY. When is the assignment xarr = yarr; legal? (Choose one.) |
| a. | Sometimes |
| b. | Always |
| c. | Never |
| d. | None of the others choices |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=133 (183) | Suppose x and y are of type TrafficLightState, which is an enum. What is the best way to test whether x and y refer to the same constant? (Choose one.) |
| a. | if (x == y) |
| b. | if (x.equals(y)) |
| c. | if (x.toString().equals(y.toString())) |
| d. | if (x.hashCode() == y.hashCode()) |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=134 (245) | Suppose you are writing a class that will provide custom deserialization. The class implements java.io.Serializable (not java.io.Externalizable). What access mode should the readObject() method have? (Choose one.) |
| a. | public |
| b. | protected |
| c. | default |

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| d. | private |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=135 (243) | Suppose you are writing a class that will provide custom serialization. The class implements java.io.Serializable (not java.io.Externalizable). What access mode should the writeObject() method have? (Choose one.) |
| a. | public |
| b. | protected |
| c. | default |
| d. | private |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=136 (211) | Suppose you want to create a custom thread class by extending java.lang.Thread in order to provide some special functionality. Which of the following must you do? (Choose one.) |
| a. | Declare that your class implements java.lang.Runnable. |
| b. | Override run(). |
| c. | Override start(). |
| d. | Make sure that all access to all data is via synchronized methods. |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=137 (214) | Suppose you want to write a class that offers static methods to compute hyperbolic trigonometric functions. You decide to subclass java.lang.Math and provide the new functionality as a set of static methods. Which one |
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| | statement is true about this strategy? |
| a. | The strategy works. |
| b. | The strategy works, provided the new methods are public. |
| c. | The strategy works, provided the new methods are not private. |
| d. | The strategy fails because you cannot subclass java.lang.Math. |
| e. | The strategy fails because you cannot add static methods to a subclass. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=138 (304) | Swing components cannot be combined with AWT components. |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=139 (299) | The class is the primary class that has the driver information. |
| a. | DriverManager |
| b. | Driver |
| c. | ODBCDriver |
| d. | None of the others |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=140 | The class is used to implement a pull-down menu that provides a |
|--------|---|

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| (307) | number of items to select from. |
| a. | MenuBar |
| b. | Menu |
| c. | MenuItem |
| d. | PopUp |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|------------------|--|
| QN=141 (1876) | The element method alters the contents of a Queue. |
| a. | True |
| b. | False |
| c. | |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=142 (303) | The Swing component classes can be found in the package. |
| a. | javax.swing |
| b. | java.swing |
| c. | javax.swings |
| d. | javax.Swing |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|--------|---|
| QN=143 | There are two classes in Java to enable communication using datagrams |
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| (310) | namely. |
| a. | DataPacket and DataSocket |
| b. | DatagramPacket and DatagramSocket |
| c. | DatagramPack and DatagramSock |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=144 (115) | <p>This question concerns the following class definition:</p> <pre> 1. package abcde; 2. 3. public class Bird { 4. protected static int referenceCount = 0; 5. public Bird() { referenceCount++; } 6. protected void fly() { /* Flap wings, etc. */ } 7. static int getRefCount() { return referenceCount; } 8. } </pre> <p>Which statement is true about class Bird and the following class Parrot? (Choose one.)</p> <pre> 1. package abcde; 2. 3. class Parrot extends abcde.Bird { 4. public void fly() { 5. /* Parrot-specific flight code. */ 6. } 7. public int getRefCount() { 8. return referenceCount; 9. } 10. } </pre> |
| a. | Compilation of Parrot.java fails at line 4 because method fly() is protected in the superclass, and classes Bird and Parrot are in the same package. |
| b. | Compilation of Parrot.java fails at line 4 because method fly() is protected in the superclass and public in the subclass, and methods may not be overridden to be more public. |
| c. | Compilation of Parrot.java fails at line 7 because method getRefCount() is static in the superclass, and static methods may not be overridden to be nonstatic. |
| d. | Compilation of Parrot.java succeeds, but a runtime exception is thrown if method fly() is ever called on an instance of class Parrot. |
| e. | Compilation of Parrot.java succeeds, but a runtime exception is thrown if |

| | |
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| | method getRefCount() is ever called on an instance of class Parrot. |
| f. | |
| ANS: | C |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=145 (116) | <p>This question concerns the following class definition:</p> <pre> 1. package abcde; 2. 3. public class Bird { 4. protected static int referenceCount = 0; 5. public Bird() { referenceCount++; } 6. protected void fly() { /* Flap wings, etc. */ } 7. static int getRefCount() { return referenceCount; } 8. } </pre> <p>Which statement is true about class Bird and the following class Nightingale? (Choose one.)</p> <pre> 1. package singers; 2. 3. class Nightingale extends abcde.Bird { 4. Nightingale() { referenceCount++; } 5. 6. public static void main(String args[]) { 7. System.out.print("Before: " + referenceCount); 8. Nightingale florence = new Nightingale(); 9. System.out.println(" After: " + referenceCount); 10. florence.fly(); 11. } 12. } </pre> |
| a. | The program will compile and execute. The output will be Before: 0 After: 2. |
| b. | The program will compile and execute. The output will be Before: 0 After: 1. |
| c. | Compilation of Nightingale will fail at line 4 because static members cannot be overridden. |
| d. | Compilation of Nightingale will fail at line 10 because method fly() is protected in the superclass. |
| e. | Compilation of Nightingale will succeed, but an exception will be thrown at line 10, because method fly() is protected in the superclass. |
| f. | |
| ANS: | A |
| MARK: | 2 |
| CHAPTER: | |

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| MIX CHOICES: | Yes |
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| QN=146 (191) | <p>This question involves IOException, AWTException, and EOFException. They are all checked exception types. IOException and AWTException extend Exception, and EOFException extends OException.</p> <p>Suppose class X contains the following method:</p> <pre>void doSomething() throws IOException{ ... }</pre> <p>Which of the following methods may appear in class Y, which extends X? (Choose three.)</p> |
| a. | void doSomething() { ... } |
| b. | void doSomething() throws AWTException { ... } |
| c. | void doSomething() throws EOFException { ... } |
| d. | void doSomething() throws IOException, EOFException { ... } |
| e. | |
| f. | |
| ANS: | ACD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=147 (4930) | URL referring to databases use the form: |
| a. | protocol:subprotocol:datasoursename |
| b. | protocol:datasoursename |
| c. | jdbc:odbc:datasoursename |
| d. | jdbc:datasoursename |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |
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QN=148 (142) What are the legal types for whatsMyType? (Choose one.)

```
short s = 10;
```

| | |
|--------------|------------------------------------|
| | whatsMyType = !s; |
| a. | short |
| b. | int |
| c. | There are no possible legal types. |
| d. | long |
| e. | char |
| f. | byte |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=149 (75) | What does the following code do? Integer i = null; if (i != null & i.intValue() == 5) System.out.println("Value is 5"); |
| a. | Prints "Value is 5". |
| b. | Throws an exception. |
| c. | Compile error |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=150 (238) | What does the following code fragment print out at line 9? (Choose one.) 1. FileOutputStream fos = new FileOutputStream("xx"); 2. for (byte b=10; b<50; b++) 3. fos.write(b); 4. fos.close(); 5. RandomAccessFile raf = new RandomAccessFile("xx", "r"); 6. raf.seek(10); 7. int i = raf.read(); 8. raf.close() 9. System.out.println("i = " + i); |
| a. | The output is i = 30. |
| b. | The output is i = 20. |
| c. | The output is i = 10. |

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| d. | There is no output because the code throws an exception at line 1. |
| e. | There is no output because the code throws an exception at line 5. |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=151 (126) | What does the following code print? <pre> public class A { static int x; public static void main(String[] args) { A that1 = new A(); A that2 = new A(); that1.x = 5; that2.x = 1000; x = -1; System.out.println(x); } } </pre> |
| a. | 0 |
| b. | 5 |
| c. | 1000 |
| d. | -1 |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=152 (251) | <p>What happens when you try to compile and run the following application? (Choose one.)</p> <pre> 1. import java.io.*; 2. 3. public class Xxx { 4. public static void main(String[] args) { 5. try { 6. File f = new File("xxx.ser"); 7. FileOutputStream fos = new FileOutputStream(f); </pre> |
|-----------------|--|

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| | <pre> 8. ObjectOutputStream oos = new ObjectOutputStream(fos); 9. oos.writeObject(new Object()); 10. oos.close(); 11. fos.close(); 12. } 13. catch (Exception x) { } 14. } 15. }</pre> |
| a. | Compiler error at line 9. |
| b. | An exception is thrown at line 9. |
| c. | An exception is thrown at line 10. |
| d. | No compiler error and no exception. |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=153 (59) | <p>What happens when you try to compile and run the following code?</p> <pre> public class Q { static String s; public static void main(String[] args) { System.out.println(">>" + s + "<<"); } }</pre> |
| a. | The code does not compile |
| b. | The code compiles, and prints out >><< |
| c. | The code compiles, and prints out >>null<< |
| d. | |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=154 (230) | <p>What happens when you try to compile and run this application? (Choose one.)</p> |
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1. import java.util.*;
- 2.

| | |
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| | <pre> 3. public class Apple { 4. public static void main(String[] a) { 5. Set<Apple> set = new TreeSet<Apple>(); 6. set.add(new Apple()); 7. set.add(new Apple()); 8. set.add(new Apple()); 9. } 10. }</pre> |
| a. | Compiler error. |
| b. | An exception is thrown at line 6. |
| c. | An exception is thrown at line 7. |
| d. | An exception is thrown at line 8. |
| e. | No exception is thrown. |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|--|
| QN=155 (86) | What is $-50 \gg 2$ |
| a. | A negative number with very large magnitude. |
| b. | A positive number with very large magnitude. |
| c. | -13 |
| d. | -25 |
| e. | 13 |
| f. | 25 |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---------------------|
| QN=156 (72) | What is $7 \% -4$? |
| a. | -3 |
| b. | 3 |
| c. | -4 |
| d. | 4 |
| e. | |
| f. | |
| ANS: | B |

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| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|-----------------|
| QN=157 (71) | What is -8 % 5? |
| a. | -3 |
| b. | 3 |
| c. | -2 |
| d. | 2 |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=158 (146) | What is the difference between the rules for method-call conversion and the rules for assignment conversion? (Choose one.) |
| a. | There is no difference; the rules are the same. |
| b. | Method-call conversion supports narrowing, assignment conversion does not. |
| c. | Assignment conversion supports narrowing, method-call conversion does not. |
| d. | Method-call conversion supports narrowing if the method declares that it throws <code>ClassCastException</code> . |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=159 (109) | What is the minimal modification that will make this code compile correctly? (Choose one.) |
| | <ol style="list-style-type: none"> 1. <code>final class Aaa</code> 2. <code>{</code> 3. <code>int xxx;</code> 4. <code>void yyy() { xxx = 1; }</code> |

| | |
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| | <pre> 5. } 6. 7. 8. class Bbb extends Aaa 9. { 10. final Aaa finalref = new Aaa(); 11. 12. final void yyy() 13. { 14. System.out.println("In method yyy()"); 15. finalref.xxx = 12345; 16. } 17. }</pre> |
| a. | On line 1, remove the final modifier. |
| b. | On line 10, remove the final modifier. |
| c. | Remove line 15. |
| d. | On lines 1 and 10, remove the final modifier. |
| e. | The code will compile as is. No modification is needed. |
| f. | |
| ANS: | A |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=160 (54) | What is the range of values that can be assigned to a variable of type byte? (Choose one.) |
| a. | Depends on the underlying hardware |
| b. | 0 through $2^8 - 1$ |
| c. | 0 through $2^{16} - 1$ |
| d. | -2^7 through $2^7 - 1$ |
| e. | -2^{15} through $2^{15} - 1$ |
| f. | |
| ANS: | D |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|--|
| QN=161 (53) | What is the range of values that can be assigned to a variable of type short? (Choose one.) |
| a. | Depends on the underlying hardware |
| b. | 0 through $2^{16} - 1$ |

| | |
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| c. | 0 through $2^{32} - 1$ |
| d. | -2^{15} through $2^{15} - 1$ |
| e. | -2^{31} through $2^{31} - 1$ |
| f. | |
| ANS: | D |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=162 (242) | <p>What is the result of attempting to compile and execute the following code fragment? Assume that the code fragment is part of an application that has write permission in the current working directory. Also assume that before execution, the current working directory does not contain a file called datafile. (Choose one.)</p> <pre> 1. try { 2. RandomAccessFile raf = new 3. RandomAccessFile("datafile", "rw"); 4. BufferedOutputStream bos = new BufferedOutputStream(raf); 5. 6. DataOutputStream dos = new DataOutputStream(bos); 7. 8. dos.writeDouble(Math.PI); 9. dos.close(); 10. bos.close(); 11. raf.close(); 12. } 13. catch (IOException e) { }</pre> |
| a. | The code fails to compile. |
| b. | The code compiles but throws an exception at line 4. |
| c. | The code compiles and executes but has no effect on the local file system. |
| d. | The code compiles and executes; afterward, the current working directory contains a file called datafile. |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=163 (83) | What is the return type of the instanceof operator? |
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| a. | A reference |
| b. | A class |
| c. | An int |
| d. | A boolean |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=164 (249) | What method of the java.io.File class can create a file on the hard drive? (Choose one.) |
| a. | newFile() |
| b. | makeFile() |
| c. | makeNewFile() |
| d. | createFile() |
| e. | createNewFile() |
| f. | |
| ANS: | E |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=165 (74) | What results from attempting to compile and run the following code? <pre> 1. public class Conditional { 2. public static void main(String args[]) { 3. int x = 4; 4. System.out.println("value is " + ((x > 4) ? 99.99 : 9)); 5. } 6. }</pre> |
| a. | The output: value is 99.99 |
| b. | The output: value is 9 |
| c. | The output: value is 9.0 |
| d. | A compiler error at line 4 |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX | Yes |

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| CHOICES: | |
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| QN=166 (73) | What results from running the following code? <pre> 1. public class Xor { 2. public static void main(String args[]) { 3. byte b = 10; // 00001010 binary 4. byte c = 15; // 00001111 binary 5. b = (byte)(b ^ c); 6. System.out.println("b contains " + b); 7. } 8. }</pre> |
| a. | The output: b contains 10 |
| b. | The output: b contains 5 |
| c. | The output: b contains 250 |
| d. | The output: b contains 245 |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX | Yes |
| CHOICES: | |

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|-----------------|--|
| QN=167 (150) | What would be the output from this code fragment? <pre> 1. int x = 0, y = 4, z = 5; 2. if (x > 2) { 3. if (y < 5) { 4. System.out.println("message one"); 5. } 6. else { 7. System.out.println("message two"); 8. } 9. } 10. else if (z > 5) { 11. System.out.println("message three"); 12. } 13. else { 14. System.out.println("message four"); 15. }</pre> |
| a. | message one |
| b. | message two |
| c. | message three |
| d. | message four |

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| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=168 (78) | When a byte is added to a char, what is the type of the result? |
| a. | byte |
| b. | char |
| c. | int |
| d. | short |
| e. | You can't add a byte to a char. |
| f. | |
| ANS: | C |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=169 (144) | When a negative byte is cast to a long, what are the possible values of the result? (Choose one.) |
| a. | Positive |
| b. | Zero |
| c. | Negative |
| d. | All the above |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=170 (143) | When a negative long is cast to a byte, what are the possible values of the result? (Choose one.) |
| a. | Positive |
| b. | Zero |
| c. | Negative |
| d. | All the above |

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| e. | |
| f. | |
| ANS: | D |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|----------------|---|
| QN=171 (79) | When a short is added to a float, what is the type of the result? |
| a. | short |
| b. | int |
| c. | float |
| d. | You can't add a short to a float. |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=172 (1531) | When comparing java.io.BufferedWriter to java.io.FileWriter, which capability exists as a method in only one of the two? (Choose one.) |
| a. | closing the stream |
| b. | flushing the stream |
| c. | writing to the stream |
| d. | marking a location in the stream |
| e. | writing a line separator to the stream |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=173 (165) | When does an exception's stack trace get recorded in the exception object? (Choose one.) |
| a. | When the exception is constructed |
| b. | When the exception is thrown |
| c. | When the exception is caught |
| d. | When the exception's printStackTrace() method is called |

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| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=174 (163) | When is it appropriate to pass a cause to an exception's constructor? (Choose one.) |
| a. | Always |
| b. | When the exception is being thrown in response to catching of a different exception type |
| c. | When the exception is being thrown from a public method |
| d. | When the exception is being thrown from a private method |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=175 (166) | When is it appropriate to write code that constructs and throws an error? (Choose one.) |
| a. | When a public method's preconditions are violated |
| b. | When a public method's postconditions are violated |
| c. | When a nonpublic method's preconditions are violated |
| d. | When a nonpublic method's postconditions are violated |
| e. | Never |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=176 (141) | When is x & y an int? (Choose one). |
| a. | Always |
| b. | Sometimes |
| c. | When neither x nor y is a float, a long, or a double |

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| d. | None of the others |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=177 (308) | When the user attempts to close the frame window, _____ event is generated. |
| a. | window closing |
| b. | window resize |
| c. | window move |
| d. | window close |
| e. | window closed |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=178 (312) | When the user selects a menu item, _____ event is generated. |
| a. | Select event |
| b. | Action event |
| c. | Item event |
| d. | None of the others |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=179 (5694) | When you compile a program written in the Java programming language, the compiler converts the human-readable source file into platform-independent code that a Java Virtual Machine can understand. What is this platform-independent code called? |
| a. | bytecode |

| | |
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| b. | binary code |
| c. | machine code |
| d. | cpu instruction |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=180 (313) | Whenever a method does not want to handle exceptions using the try block, the _____ is used. |
| a. | throws |
| b. | throw |
| c. | throwable |
| d. | nothrows |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=181 (7267) | Which are the correct statements used for getting connection object to connect to SQL Server database? |
| a. | String url ="jdbc:odbc:data_source_name"; Connection con = DriverManager.getConnection (url, "user", "password"); |
| b. | String url ="odbc:jdbc:data_source_name"; Connection con = DriverManager.getConnection (url, "user", "password"); |
| c. | String url ="jdbc:data_source_name:odbc"; Connection con = DriverManager.getConnection (url, "user", "password"); |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|------------------|---|
| QN=182 (1879) | Which class and static method can you use to convert an array to a List? (Choose one.) |
| a. | Arrays.asList |
| b. | Arrays.toList |
| c. | Arrays.createList |
| d. | Arrays.makeList |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=183 (302) | Which is four-step approach to help you organize your GUI thinking. (Choose one.) |
| a. | Identify needed components. Isolate regions of behavior. Sketch the GUI. Choose layout managers. |
| b. | Choose layout managers. Identify needed components. Isolate regions of behavior. Sketch the GUI. |
| c. | Identify needed components. Choose layout managers. Isolate regions of behavior. Sketch the GUI. |
| d. | |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=184 (4928) | Which is the four steps are used in working with JDBC? |
| a. | 1)Connect to the database 2)Create a statement and execute the query 3)Look at the result set 4)Close connection |

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| b. | 1)Load driver 2)Create a statement and execute the query 3)Look at the result set 4)Close connection |
| c. | 1)Create a statement and execute the query 2)Load driver 3)Look at the result set 4)Close connection |
| d. | 1)Create a statement and execute the query 2)Create the connection 3)Look at the result set 4)Close connection |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=185 (7256) | Which JDBC processing model that requires a JDBC driver that can communicate with the particular data source being accessed? |
| a. | two-tier |
| b. | three-tier |
| c. | one-tier |
| d. | four-tier |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=186 (229) | Which line of code tells a scanner called sc to use a single digit as a delimiter? (Choose one.) |
| a. | sc.useDelimiter("d"); |
| b. | sc.useDelimiter("\d"); |
| c. | sc.useDelimiter("\\d"); |
| d. | sc.useDelimiter("d+"); |
| e. | sc.useDelimiter("\d+"); |
| f. | sc.useDelimiter("\\d+"); |
| ANS: | C |

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| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=187 (1411) | Which Man class properly represents the relationship "Man has the best friend who is a Dog"? (Choose one.) |
| a. | class Man extends Dog { } |
| b. | class Man implements Dog { } |
| c. | class Man { private BestFriend dog; } |
| d. | class Man { private Dog bestFriend; } |
| e. | class Man { private Dog<bestFriend> } |
| f. | class Man { private BestFriend<dog> } |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=188 (189) | Which methods return an enum constant's name? (Choose two.) |
| a. | getName() |
| b. | name() |
| c. | toString() |
| d. | nameString() |
| e. | getNameString() |
| f. | |
| ANS: | BC |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=189 (114) | Which modifier or modifiers should be used to denote a variable that should not be written out as part of its class's persistent state? (Choose the shortest possible answer.) |
| a. | private |
| b. | protected |
| c. | private protected |
| d. | transient |
| e. | volatile |
| f. | |

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| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=190 (162) | Which of the following are legal argument types for a switch statement? (Choose three.) |
| a. | byte |
| b. | int |
| c. | long |
| d. | float |
| e. | char |
| f. | String |
| ANS: | ABE |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=191 (177) | Which of the following are legal enums? (Choose three.) |
| a. | <code>enum Animals { LION, TIGER, BEAR }</code> |
| b. | <code>enum Animals { int age; LION, TIGER, BEAR; }</code> |
| c. | <code>enum Animals { LION, TIGER, BEAR; int weight; }</code> |
| d. | <code>enum Animals { LION(450), TIGER(450), BEAR; int weight; Animals(int w) { weight = w; } }</code> |
| e. | <code>enum Animals { LION(450), TIGER(450), BEAR; int weight; Animals() { } Animals(int w) { weight = w; }</code> |

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| | } |
| | } |
| f. | |
| ANS: | ACE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=192 (57) | Which of the following are legal import statements? (Choose two.) |
| a. | import java.util.Vector; |
| b. | static import java.util.Vector.*; |
| c. | import static java.util.Vector.*; |
| d. | import java.util.Vector static; |
| e. | |
| f. | |
| ANS: | AC |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=193 (149) | Which of the following are legal loop constructions? (Choose one.) |
| a. | while (int i<7) { i++; System.out.println("i is " + i); } |
| b. | int i = 3; while (i) { System.out.println("i is " + i); } |
| c. | int j = 0; for (int k=0, j+k != 10; j++,k++) { System.out.println("j=" + j + ", k=" + k); } |
| d. | int j=0; do { System.out.println("j=" + j++); if (j==3) continue loop; } while (j<10); |
| e. | |

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| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=194 (161) | Which of the following are legal loop definitions? (Choose one.) |
| a. | while (int a = 0) { /* whatever */ } |
| b. | while (int a == 0) { /* whatever */ } |
| c. | do { /* whatever */ } while (int a = 0) |
| d. | do { /* whatever */ } while (int a == 0) |
| e. | for (int a==0; a<100; a++) { /* whatever */ } |
| f. | None of the above. |
| ANS: | F |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=195 (159) | Which of the following are legal? (Choose three.) |
| a. | for (int i=0, j=1; i<10; i++, j++) |
| b. | for (int i=0, j=1;; i++, j++) |
| c. | for (int i=0, float j=1; ; i++, j++) |
| d. | for (String s = ""; s.length()<10; s += '!') |
| e. | while(1) |
| f. | |
| ANS: | ABD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=196 (62) | Which of the following are legal? (Choose two.) |
| a. | double d = 1.2d; |
| b. | double d = 1.2D; |
| c. | double d = 1.2d5; |
| d. | double d = 1.2D5; |
| e. | |

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| f. | |
| ANS: | AB |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=197 (61) | Which of the following are legal? (Choose two.) |
| a. | int a = abcd; |
| b. | int b = ABCD; |
| c. | int c = 0xabcd; |
| d. | int d = 0XABCD; |
| e. | int f = 0ABCD; |
| f. | |
| ANS: | CD |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=198 (63) | Which of the following are legal? (Choose two.) |
| a. | char c = 0x1234; |
| b. | char c = \u1234; |
| c. | char c = "u1234"; |
| d. | |
| e. | |
| f. | |
| ANS: | AC |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=199 (223) | Which of the following are legal? (Choose two.) |
| a. | List<String> theList = new Vector<String>; |
| b. | List<String> theList = new Vector<String>(); |
| c. | Vector <String> theVec = new Vector<String>; |
| d. | Vector <String> theVec = new Vector<String>(); |
| e. | |

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| f. | |
| ANS: | BD |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=200 (228) | Which of the following are methods of the java.util.SortedMap interface? (Choose three.) |
| a. | first |
| b. | last |
| c. | headMap |
| d. | tailMap |
| e. | subMap |
| f. | |
| ANS: | CDE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=201 (227) | Which of the following are methods of the java.util.SortedSet interface? (Choose one.) |
| a. | first |
| b. | last |
| c. | headSet |
| d. | tailSet |
| e. | subSet |
| f. | All the above |
| ANS: | F |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|--|
| QN=202 (250) | Which of the following are true? (Choose one.) |
| a. | System.out has a println() method. |
| b. | System.out has a format() method. |
| c. | System.err has a println() method. |
| d. | System.err has a format () method. |
| e. | All the above |

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| f. | |
| ANS: | E |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=203 (207) | Which of the following are true? (Choose one.) |
| a. | The JVM runs until there is only one daemon thread. |
| b. | The JVM runs until there are no daemon threads. |
| c. | The JVM runs until there is only one non-daemon thread. |
| d. | The JVM runs until there are no non-daemon threads. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=204 (206) | Which of the following are true? (Choose three.) |
| a. | When an application begins running, there is one daemon thread, whose job is to execute main(). |
| b. | When an application begins running, there is one non-daemon thread, whose job is to execute main(). |
| c. | A thread created by a daemon thread is initially also a daemon thread. |
| d. | A thread created by a non-daemon thread is initially also a non-daemon thread. |
| e. | |
| f. | |
| ANS: | BCD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=205 (210) | Which of the following are true? (Choose two.) |
| a. | When you declare a method to be synchronized, the method always synchronizes on the lock of the current object. |

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| b. | When you declare a method to be synchronized, you can specify the object on whose lock the method should synchronize. |
| c. | When you declare a block of code inside a method to be synchronized, the block always synchronizes on the lock of the current object. |
| d. | When you declare a block of code inside a method to be synchronized, you can specify the object on whose lock the block should synchronize. |
| e. | |
| f. | |
| ANS: | AD |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=206 (185) | Which of the following are true? (Choose two.) |
| a. | An enum definition should declare that it extends java.lang.Enum. |
| b. | An enum may be subclassed. |
| c. | An enum may contain public method definitions. |
| d. | An enum may contain private data. |
| e. | |
| f. | |
| ANS: | CD |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|--|
| QN=207 (65) | Which of the following are true? (Choose two.) |
| a. | Primitives are passed by reference. |
| b. | Primitives are passed by value. |
| c. | References are passed by reference. |
| d. | References are passed by value. |
| e. | |
| f. | |
| ANS: | BD |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=208 (188) | Which of the following are true? (Choose two.) |
| a. | An anonymous inner class may implement at most one interface. |
| b. | An anonymous inner class may implement arbitrarily many interfaces. |
| c. | An anonymous inner class may extend a parent class other than Object. |
| d. | An anonymous inner class that implements one interface may extend a parent class other than Object. |
| e. | An anonymous inner class that implements several interfaces may extend a parent class other than Object. |
| f. | |
| ANS: | AC |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=209 (253) | Which of the following are valid arguments to the DataInputStream constructor? (Choose one.) |
| a. | File |
| b. | FileReader |
| c. | FileInputStream |
| d. | RandomAccessFile |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=210 (252) | Which of the following are valid mode strings for the RandomAccessFile constructor? (Choose one.) |
| a. | "r" |
| b. | "rw" |
| c. | "rws" |
| d. | "rwd" |
| e. | All the above |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=211 (203) | Which of the following calls may be made from a non-static synchronized method? (Choose one.) |
| a. | A call to the same method of the current object. |
| b. | A call to the same method of a different instance of the current class. |
| c. | A call to a different synchronized method of the current object. |
| d. | A call to a static synchronized method of the current class. |
| e. | All the above |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|--|
| QN=212 (226) | Which of the following classes implement java.util.List? (Choose two.) |
| a. | java.util.ArrayList |
| b. | java.util.HashMap |
| c. | java.util.TreeSet |
| d. | java.util.Stack |
| e. | |
| f. | |
| ANS: | AD |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|------------------|---|
| QN=213 (1878) | Which of the following classes implements a FIFO Queue? (Choose one.) |
| a. | HashSet |
| b. | LinkedList |
| c. | PriorityQueue |
| d. | CopyOnWriteArraySet |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=214 (107) | Which of the following declarations are illegal? (Choose three.) |
| a. | default String s; |
| b. | transient int i = 41; |
| c. | public final static native int w(); |
| d. | abstract double d; |
| e. | abstract final double hyperbolicCosine(); |
| f. | |
| ANS: | ADE |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=215 (68) | Which of the following expressions are legal? (Choose two.) |
| a. | int x = 6; x = !x; |
| b. | int x = 6; if (!(x > 3)) {} |
| c. | int x = 6; x = ~x; |
| d. | |
| e. | |
| f. | |
| ANS: | BC |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=216 (70) | Which of the following expressions are legal? (Choose two.) |
| a. | String x = "Hello"; int y = 9; x += y; |
| b. | String x = "Hello"; int y = 9; if (x == y) {} |
| c. | String x = "Hello"; int y = 9; x = x + y; |
| d. | String x = "Hello"; int y = 9; y = y + x; |
| e. | |
| f. | |
| ANS: | AC |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=217 (69) | Which of the following expressions results in a positive value in x? (Choose one.) |
| a. | <code>int x = -1; x = x >>> 5;</code> |
| b. | <code>int x = -1; x = x >>> 32;</code> |
| c. | <code>byte x = -1; x = x >>> 5;</code> |
| d. | <code>int x = -1; x = x >> 5;</code> |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|------------------|--|
| QN=218 (1874) | Which of the following interfaces does not allow duplicate objects? (Choose one.) |
| a. | Queue |
| b. | Set |
| c. | List |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=219 (155) | Which of the following is not appropriate situations for assertions? (Choose one) |
| a. | Preconditions of a public method |
| b. | Postconditions of a public method |
| c. | Preconditions of a private method |
| d. | Postconditions of a private method |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|------------------|--|
| QN=220 (5695) | Which of the following is NOT a valid comment: |
| a. | <code>/** comment */</code> |
| b. | <code>/* comment */</code> |
| c. | <code>/* comment</code> |
| d. | <code>// comment</code> |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=221 (157) | Which of the following is the most appropriate way to handle invalid arguments in a public method? |
| a. | Throw <code>java.lang.InvalidArgumentException</code> . |
| b. | Throw <code>java.lang.IllegalArgumentException</code> . |
| c. | Check for argument validity in an assert statement, which throws <code>AssertionError</code> when the arguments are invalid. |
| d. | Use non-assert code to check for argument validity. If invalid arguments are detected, explicitly throw <code>AssertionError</code> . |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=222 (240) | Which of the following is true? (Choose one.) |
| a. | Readers have methods that can read and return floats and doubles. |
| b. | Readers have methods that can read and return floats. |
| c. | Readers have methods that can read and return doubles. |
| d. | Readers have methods that can read and return ints. |
| e. | None of the above |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |

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| MIX No CHOICES: | |
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|-----------------|---|
| QN=223 (184) | Which of the following is(are) true? (Choose one.) |
| a. | An enum definition may contain the main() method of an application. |
| b. | You can call an enum's toString() method. |
| c. | You can call an enum's wait() method. |
| d. | You can call an enum's notify() method. |
| e. | All the above |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|----------------|--|
| QN=224 (84) | Which of the following may appear on the left-hand side of an instanceof operator? |
| a. | A reference |
| b. | A class |
| c. | An interface |
| d. | A variable of primitive type |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=225 (85) | Which of the following may appear on the right-hand side of an instanceof operator? (Choose two.) |
| a. | A reference |
| b. | A class |
| c. | An interface |
| d. | A variable of primitive type |
| e. | The name of a primitive type |
| f. | |
| ANS: | BC |
| MARK: | 1 |
| CHAPTER: | |

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| MIX CHOICES: | Yes |
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|-----------------|---|
| QN=226 (120) | Which of the following may be declared final? (Choose two.) |
| a. | Classes |
| b. | Interfaces |
| c. | Methods |
| d. | |
| e. | |
| f. | |
| ANS: | AC |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|--|
| QN=227 (58) | Which of the following may be statically imported? (Choose two.) |
| a. | Package names |
| b. | Static method names |
| c. | Static field names |
| d. | Method-local variable names |
| e. | |
| f. | |
| ANS: | BC |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=228 (121) | Which of the following may follow the static keyword? (Choose three.) |
| a. | Class definitions |
| b. | Data |
| c. | Methods |
| d. | Code blocks enclosed in curly brackets |
| e. | Variables |
| f. | |
| ANS: | BCD |
| MARK: | 0.5 |
| CHAPTER: | |

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| MIX CHOICES: | Yes |
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|-----------------|--|
| QN=229 (137) | Which of the following may legally appear as the new type (between the parentheses) in a cast operation? (Choose one.) |
| a. | Classes |
| b. | Interfaces |
| c. | Arrays of classes |
| d. | Arrays of interfaces |
| e. | All of the others |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|--|
| QN=230 (138) | Which of the following may legally appear as the new type (between the parentheses) in a cast operation? (Choose one.) |
| a. | Abstract classes |
| b. | Final classes |
| c. | Primitives |
| d. | All of the above |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=231 (202) | Which of the following may not be synchronized? (Choose one.) |
| a. | Blocks within methods |
| b. | Static methods |
| c. | Blocks within static methods |
| d. | Classes |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |

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| MIX CHOICES: | Yes |
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| QN=232 (186) | Which of the following may override a method whose signature is void xyz(float f)? (Choose two.) |
| a. | void xyz(float f) |
| b. | public void xyz(float f) |
| c. | private void xyz(float f) |
| d. | public int xyz(float f) |
| e. | private int xyz(float f) |
| f. | |
| ANS: | AB |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=233 (199) | Which of the following methods in the Thread class are deprecated? (Choose one.) |
| a. | suspend() and resume() |
| b. | wait() and notify() |
| c. | start() and stop() |
| d. | sleep() and yield() |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|---|
| QN=234 (81) | Which of the following operations might throw an ArithmeticException? (Choose one.) |
| a. | >>> |
| b. | >>>> |
| c. | <<< |
| d. | None of these |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 0.5 |
| CHAPTER: | |

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| MIX CHOICES: | Yes |
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|----------------|--|
| QN=235 (82) | Which of the following operations might throw an ArithmeticException? (Choose one.) |
| a. | + |
| b. | - |
| c. | * |
| d. | / |
| e. | None of the others |
| f. | |
| ANS: | D |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | No |

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|-----------------|---|
| QN=236 (145) | Which of the following operators can perform promotion on their operands? (Choose three.) |
| a. | + |
| b. | - |
| c. | ++ |
| d. | -- |
| e. | ~ |
| f. | ! |
| ANS: | ABE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=237 (182) | Which of the following restrictions apply to anonymous inner classes? (Choose one.) |
| a. | They must be defined inside a code block. |
| b. | They may only read and write final variables of the enclosing class. |
| c. | They may only call final methods of the enclosing class. |
| d. | They may not call the enclosing class' synchronized methods. |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |

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| MIX CHOICES: | Yes |
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|-----------------|---|
| QN=238 (164) | Which of the following should always be caught? (Choose one.) |
| a. | Runtime exceptions |
| b. | Checked exceptions |
| c. | Assertion errors |
| d. | Errors other than assertion errors |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|----------------|--|
| QN=239 (47) | Which of the following signatures are valid for the main() method entry point of an application? (Choose two.) |
| a. | public static void main() |
| b. | public static void main(String arg[]) |
| c. | public void main(String [] arg) |
| d. | public static void main(String[] args) |
| e. | public static int main(String [] arg) |
| f. | |
| ANS: | BD |
| MARK: | 0.5 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=240 (201) | Which of the following statements about the wait() and notify() methods is true? (Choose one.) |
| a. | The wait() and notify() methods can be called outside synchronized code. |
| b. | The programmer can specify which thread should be notified in a notify() method call. |
| c. | The thread that calls wait() goes into the monitor's pool of waiting threads. |
| d. | The thread that calls notify() gives up the lock. |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |

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| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=241 (200) | Which of the following statements about threads is true? (Choose one.) |
| a. | Every thread starts executing with a priority of 5. |
| b. | Threads inherit their priority from their parent thread. |
| c. | Threads are guaranteed to run with the priority that you set using the setPriority() method. |
| d. | Thread priority is an integer ranging from 1 to 100. |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=242 (125) | Which of the following statements are true? (Choose one.) |
| a. | A final class must be instantiated. |
| b. | A final class may only contain final methods. |
| c. | A final class may not contain non-final data fields. |
| d. | A final class may not be extended. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=243 (176) | Which of the following statements are true? (Choose one.) |
| a. | Given that Inner is a nonstatic class declared inside a public class Outer and that appropriate constructor forms are defined, an instance of Inner can be constructed like this: new Outer().new Inner() |
| b. | If an anonymous inner class inside the class Outer is defined to implement the interface ActionListener, it can be constructed like this: new Outer().new ActionListener() |
| c. | Given that Inner is a nonstatic class declared inside a public class Outer |

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| | and that appropriate constructor forms are defined, an instance of Inner can be constructed in a static method like this: new Inner() |
| d. | An anonymous class instance that implements the interface MyInterface can be constructed and returned from a method like this: <pre> 1. return new MyInterface(int x) { 2. int x; 3. public MyInterface(int x) { 4. this.x = x; 5. } 6. }; </pre> |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=244 (118) | Which of the following statements are true? (Choose one.) |
| a. | An abstract class may be instantiated. |
| b. | An abstract class must contain at least one abstract method. |
| c. | An abstract class must contain at least one abstract data field. |
| d. | An abstract class must be overridden. |
| e. | An abstract class must declare that it implements an interface. |
| f. | None of the above |
| ANS: | F |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=245 (232) | Which of the following statements are true? (Choose two.) |
| a. | StringBuilder is generally faster than StringBuffer. |
| b. | StringBuffer is generally faster than StringBuilder. |
| c. | StringBuilder is threadsafe; StringBuffer is not. |
| d. | StringBuffer is threadsafe; StringBuilder is not. |
| e. | |
| f. | |
| ANS: | AD |
| MARK: | 1 |

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| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=246 (108) | Which of the following statements are true? 1)An abstract class may not have any final methods. 2)A final class may not have any abstract methods. |
| a. | Only statement 1 |
| b. | Only statement 2 |
| c. | Both statement 1 and 2 |
| d. | |
| e. | |
| f. | |
| ANS: | B |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=247 (127) | Which of the following statements is correct? (Choose one.) |
| a. | Only primitives are converted automatically; to change the type of an object reference, you have to do a cast. |
| b. | Only object references are converted automatically; to change the type of a primitive, you have to do a cast. |
| c. | Arithmetic promotion of object references requires explicit casting. |
| d. | Both primitives and object references can be both converted and cast. |
| e. | Casting of numeric types may require a runtime check. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=248 (110) | Which of the following statements is true? (Choose one.) |
| a. | Transient methods may not be overridden. |
| b. | Transient methods must be overridden. |
| c. | Transient classes may not be serialized. |
| d. | Transient variables must be static. |
| e. | Transient variables are not serialized. |

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| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=249 (132) | Which of the following statements is true? (Choose one.) |
| a. | Object references can be converted in assignments but not in method calls. |
| b. | Object references can be converted in method calls but not in assignments. |
| c. | Object references can be converted in both method calls and assignments, but the rules governing these conversions are very different. |
| d. | Object references can be converted in both method calls and assignments, and the rules governing these conversions are identical. |
| e. | Object references can never be converted. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=250 (233) | Which of the statements below are true? (Choose one.) |
| a. | UTF characters are all 8 bits. |
| b. | UTF characters are all 16 bits. |
| c. | UTF characters are all 24 bits. |
| d. | Unicode characters are all 16 bits. |
| e. | Bytecode characters are all 16 bits. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=251 (235) | Which of the statements below are true? (Choose one.) |
| a. | To change the current working directory, call the setWorkingDirectory() method of the File class. |
| b. | To change the current working directory, call the cd() method of the File |

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| | class. |
| c. | To change the current working directory, call the <code>changeWorkingDirectory()</code> method of the <code>File</code> class. |
| d. | None of the above |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=252 (234) | Which of the statements below are true? (Choose one.) |
| a. | When you construct an instance of <code>File</code> , if you do not use the file-naming semantics of the local machine, the constructor will throw an <code>IOException</code> . |
| b. | When you construct an instance of <code>File</code> , if the corresponding file does not exist on the local file system, one will be created. |
| c. | When an instance of <code>File</code> is garbage collected, the corresponding file on the local file system is deleted. |
| d. | None of the above. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=253 (128) | Which one line in the following code will not compile? 1. <code>byte b = 5;</code> 2. <code>char c = '5';</code> 3. <code>short s = 55;</code> 4. <code>int i = 555;</code> 5. <code>float f = 555.5f;</code> 6. <code>b = s;</code> 7. <code>i = c;</code> 8. <code>if (f > b)</code> 9. <code> f = i;</code> |
| a. | Line 5 |
| b. | Line 2 |
| c. | Line 3 |
| d. | Line 7 |

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| e. | Line 9 |
| f. | Line 6 |
| ANS: | F |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=254 (193) | <p>Which one statement is always true about the following application?</p> <pre> 1. class HiPri extends Thread { 2. HiPri() { 3. setPriority(10); 4. } 5. 6. public void run() { 7. System.out.println(8. "Another thread starting up."); 9. while (true) { } 10. } 11. 12. public static void main(String args[]) { 13. HiPri hp1 = new HiPri(); 14. HiPri hp2 = new HiPri(); 15. HiPri hp3 = new HiPri(); 16. hp1.start(); 17. hp2.start(); 18. hp3.start(); 19. } 20. }</pre> |
| a. | When the application is run, thread hp1 will execute; threads hp2 and hp3 will never get the CPU. |
| b. | When the application is run, thread hp1 will execute to completion, thread hp2 will execute to completion, then thread hp3 will execute to completion. |
| c. | When the application is run, all three threads (hp1, hp2, and hp3) will execute concurrently, taking time-sliced turns in the CPU. |
| d. | None of the above scenarios can be guaranteed to happen in all cases. |
| e. | |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | No |

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| QN=255 (215) | Which one statement is true about the following code fragment? (choose 1) 1. import java.lang.Math; 2. Math myMath = new Math(); 3. System.out.println("cosine of 0.123 = " + myMath.cos(0.123)); |
| a. | Compilation fails at line 2. |
| b. | Compilation fails at line 3 |
| c. | Compilation succeeds, although the import on line 1 is not necessary. During execution, an exception is thrown at line 3 |
| d. | Compilation succeeds. The import on line 1 is necessary. During execution, an exception is thrown at line 3 |
| e. | Compilation succeeds and no exception is thrown during execution. |
| f. | |
| ANS: | A |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=256 (216) | Which one statement is true about the following code fragment? 1. String s = "FPT"; 2. StringBuffer s1 = new StringBuffer("FPT"); 3. if (s.equals(s1)) 4. s1 = null; 5. if (s1.equals(s)) 6. s = null; |
| a. | Compilation fails at line 1 because the String constructor must be called explicitly. |
| b. | Compilation fails at line 3 because s and s1 have different types. |
| c. | Compilation succeeds. During execution, an exception is thrown at line 3. |
| d. | Compilation succeeds. During execution, an exception is thrown at line 5. |
| e. | Compilation succeeds. No exception is thrown during execution. |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=257 (213) | Which one statement is true about the following code? 1. String s1 = "abc" + "def"; |
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| | 2. String s2 = new String(s1); 3. if (s1 == s2) 4. System.out.println("== succeeded"); 5. if (s1.equals(s2)) 6. System.out.println(".equals() succeeded"); |
| a. | Lines 4 and 6 both execute. |
| b. | Line 4 executes and line 6 does not. |
| c. | Line 6 executes and line 4 does not. |
| d. | Neither line 4 nor line 6 executes. |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=258 (192) | Which one statement is true concerning the following code? 1. class Greebo extends java.util.Vector implements Runnable { 2. 3. public void run(String message) { 4. System.out.println("in run() method: " + message); 5. 6. } 7. } 8. 9. class GreeboTest { 10. public static void main(String args[]) { 12. Greebo g = new Greebo(); 13. Thread t = new Thread(g); 14. t.start(); 15. } 16. } |
| a. | There will be a compiler error, because class Greebo does not correctly implement the Runnable interface. |
| b. | There will be a compiler error at line 13, because you cannot pass a parameter to the constructor of a Thread. |
| c. | The code will compile correctly but will crash with an exception at line 13. |
| d. | The code will compile correctly but will crash with an exception at line 14. |
| e. | The code will compile correctly and will execute without throwing any exceptions. |
| f. | |
| ANS: | A |
| MARK: | 2 |

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| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=259 (151) | Which statement is true about the following code fragment? (Choose one.) <pre> 1. int j = 2; 2. switch (j) { 3. case 2: 4. System.out.println("value is two"); 5. case 2 + 1: 6. System.out.println("value is three"); 7. break; 8. default: 9. System.out.println("value is " + j); 10. break; 11. } </pre> |
| a. | The code is illegal because of the expression at line 5. |
| b. | The acceptable types for the variable j, as the argument to the switch() construct, could be any of byte, short, int, or long. |
| c. | The output would be the text value is two. |
| d. | The output would be the text value is two followed by the text value is three. |
| e. | The output would be the text value is two, followed by the text value is three, followed by the text value is 2. |
| f. | |
| ANS: | D |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=260 (80) | Which statement is true about the following method? <pre> int selfXor(int i) { return i ^ i; } </pre> |
| a. | It always returns 0. |
| b. | It always returns 1. |
| c. | It always an int where every bit is 1. |
| d. | The returned value varies depending on the argument. |
| e. | |
| f. | |
| ANS: | A |
| MARK: | 1 |

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| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=261 (111) | Which statement is true about this application? (Choose one.) <pre> 1. class StaticStuff 2 { 3. static int x = 10; 4. 5. static { x += 5; } 6. 7. public static void main(String args[]) 8. { 9. System.out.println("x = " + x); 10. } 11. 12. static { x /= 5; } 13. }</pre> |
| a. | Lines 5 and 12 will not compile because the method names and return types are missing. |
| b. | Line 12 will not compile because you can only have one static initializer. |
| c. | The code compiles and execution produces the output x = 10. |
| d. | The code compiles and execution produces the output x = 15. |
| e. | The code compiles and execution produces the output x = 3. |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|--|
| QN=262 (112) | Which statement is true about this code? (Choose one.) <pre> 1. class HasStatic 2. { 3. private static int x = 100; 4. 5. public static void main(String args[]) 6. { 7. HasStatic hs1 = new HasStatic(); 8. hs1.x++; 9. HasStatic hs2 = new HasStatic(); 10. hs2.x++; 11. hs1 = new HasStatic(); 12. hs1.x++;</pre> |
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| | <pre> 13. HasStatic.x++; 14. System.out.println("x = " + x); 15. } 16. }</pre> |
| a. | Line 8 will not compile because it is a static reference to a variable. |
| b. | Line 13 will not compile because it is a static reference to a private variable. |
| c. | The program compiles and the output is x = 102. |
| d. | The program compiles and the output is x = 103. |
| e. | The program compiles and the output is x = 104. |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=263 (4929) | Which statements about JDBC are NOT true? (choose 2) |
| a. | JDBC is a Java API for executing SQL statements. |
| b. | JDBC provides a standard API for tool/database developers and makes it possible to write database applications using a pure Java API. |
| c. | It consists of a set of classes and interfaces written in the Java programming language. |
| d. | The combination of Java and JDBC lets a programmer write it once and run it anywhere. |
| e. | JDBC is a Java database system. |
| f. | JDBC is a Java API for connecting to any kind of DBMS |
| ANS: | EF |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=264 (1423) | Which two code fragments correctly create and initialize a static array of int elements? (Choose two.) |
| a. | static final int[] a = { 100,200 }; |
| b. | static final int[] a; static { a=new int[2]; a[0]=100; a[1]=200; } |
| c. | static final int[] a = new int[2] { 100,200 }; |
| d. | static final int[] a; static void init() {a=new int[3];a[0]=100; a[1]=200;} |
| e. | |

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| f. | |
| ANS: | AB |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=265 (1873) | Which two of the following interfaces are at the top of the hierarchies in the Java Collections Framework? (Choose two.) |
| a. | Set |
| b. | Map |
| c. | Queue |
| d. | SortedMap |
| e. | Collection |
| f. | List |
| ANS: | BE |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=266 (241) | You execute the following code in an empty directory. What is the result? (Choose one.) 1. File f1 = new File("dirname"); 2. File f2 = new File(f1, "filename"); |
| a. | A new directory called dirname is created in the current working directory. |
| b. | A new directory called dirname is created in the current working directory. A new file called filename is created in directory dirname. |
| c. | A new directory called dirname and a new file called filename are created, both in the current working directory. |
| d. | A new file called filename is created in the current working directory. |
| e. | No directory is created, and no file is created. |
| f. | |
| ANS: | E |
| MARK: | 1 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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| QN=267 (171) | You have been given a design document for a veterinary registration system for implementation in Java. It states: |
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| | <p>"A pet has an owner, a registration date, and a vaccination-due date. A cat is a pet that has a flag indicating if it has been neutered, and a textual description of its markings."</p> <p>Given that the Pet class has already been defined and you expect the Cat class to be used freely throughout the application, how would you make the opening declaration of the Cat class, up to but not including the first opening brace? Use only these words and spaces: boolean, Cat, class, Date, extends, Object, Owner, Pet, private, protected, public, String. (Choose one.)</p> |
| a. | protected class Cat extends Owner |
| b. | public class Cat extends Object |
| c. | public class Cat extends Pet |
| d. | private class Cat extends Pet |
| e. | |
| f. | |
| ANS: | C |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |

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|-----------------|---|
| QN=268 (170) | <p>You have been given a design document for a veterinary registration system for implementation in Java. It states:</p> <p>"A pet has an owner, a registration date, and a vaccination-due date. A cat is a pet that has a flag indicating whether it has been neutered, and a textual description of its markings."</p> <p>Given that the Pet class has already been defined, which of the following fields would be appropriate for inclusion in the Cat class as members? (Choose two.)</p> |
| a. | Pet thePet; |
| b. | Date registered; |
| c. | Date vaccinationDue; |
| d. | Cat theCat; |
| e. | boolean neutered; |
| f. | String markings; |
| ANS: | EF |
| MARK: | 2 |
| CHAPTER: | |
| MIX CHOICES: | Yes |